34th Congress, 1st Session. } HOUSE OF REPRESENTATIVES. { Report No. 274.

PACIFIC RAILROAD AND TELEGRAPH.

July 24, 1856.—Ordered to be printed.

July 28, 1856.—*Resolved*, That ten thousand extra copies of the Majority and two Minority Reports of the Select Committee on the subject of the Pacific Railroad, be printed for the use of the members of the House of Representatives; said reports to be stitched together for distribution.

Mr. Denver, from the Select Committee, gave notice that, when in order, he would submit the following

REPORT.

The Select Committee to whom was referred the bill to provide for the establishment of railroad and telegraphic communication between the Atlantic States and the Pacific ocean, and for other purposes, beg leave to make the following report:

The necessity that exists for constructing lines of railroad and telegraphic communication between the Atlantic and Pacific coasts of this continent is no longer a question for argument; it is conceded by every one. In order to maintain our present position on the Pacific, we must have some more speedy and direct means of intercourse than is at present afforded by the route through the possessions of a foreign power.

The importance of our Pacific possessions is felt in every pursuit and in every relation of life. The gold of California has furnished the merchant and trader with a capital by which enterprises have been undertaken and accomplished which were before deemed impracticable. Our commercial marine has been nearly doubled since 1848; internal improvements have been pushed forward with astonishing rapidity; the value of every kind of property has been doubled; and the evidences of prosperity and thrift are everywhere to be seen. The security and protection of that country from whence have emanated nearly all these satisfactory results, is of the greatest importance; and that can be accomplished only by direct and easy communications through our own territories. Railroads will effect this. At present, we are forced to resort to a very circuitous route by sea, through the tropics and across the continent, at the most sickly point in the torrid zone. Should a war break out between our country and any other maritime nation, or should a difficulty arise with one of the petty Spanish-American States through which these routes lie, our communications would be interrupted, and the unity of our confederacy actually broken up.

Looking to these facts alone to secure the construction of these lines of communication, has given to them such an importance as never attached to any work of internal improvements since the time when, during President Jefferson's administration, it was thought ne-

cessary to connect the States lying on the Atlantic seaboard with the States lying in the valley of the Mississippi, by means of roads across the Alleghany mountains. Insignificant as such an undertaking as the building of a wagon road across the Alleghanies may appear now, the proposition was then deemed exceedingly difficult and occupied quite as much of the public attention as the Pacific railroad does at the present time. The States were then separated only by the mountain range of the Alleghanies, but the western country was so remote and access to it so difficult, that the construction of a road was considered absolutely necessary, and sufficient to authorize the earnest attention of Congress. The people of the western frontier were at that time exposed to frequent incursions of the Indians. The country was exceedingly fertile, but the markets were so distant that the productions were an incumbrance rather than a profit to the farmer, and vast tracts of rich agricultural lands were suffered to remain an unbroken waste. The action of the government attracted public attention, and awakened private enterprise. Canals were projected, and then followed railroads, until every part of that country, which was but a few years ago called the "far west," has been brought within three or four days' communication with the cities on the seaboard, giving a new impulse to commerce, increasing the value of property, and relieving the frontiers from all the dangers of a hostile foe. No better example can be given of the benefits resulting from the construction of railroads, to both public and private property, than that of the Illinois Central Railroad. On the line of that road the public lands had been offered for sale many years without finding a purchaser, and were at last reduced to the lowest minimum price, twelve and a half cents per acre. Even this reduction was not sufficient to induce their sale; but after the government had given away one-half to assist in building the road, the other half was very readily sold for two dollars and fifty cents per acre. Similar results have followed the building of nearly every other railroad in the country, although in many instances, as in this, the roads came in direct competition with river and canal transportation.

A railroad across the continent would open up a vast extent of country to settlement, and much of what is now believed to be sterile and barren will, no doubt, (as in California) be found to yield bountifully to the agriculturist.

These lands are now totally without value, no matter how fertile they may be, and to the government worthless. By giving away one half for the construction of the proposed roads, the government will thereby attach a value to the remainder; and whatever that value may be, will be the amount the government is gainer by the transaction. Your committee have not thought proper to step aside from the long established system of the government in granting lands only to aid in the construction of the roads under consideration, except incidentally, in the payment for transportation of troops, munitions of war, &c., and for carrying the mails; at the same time they have endeavored to extend to every portion of the country an equal share of the benefits to be derived from it. Every part of the country, extending from Lake Superior to the Gulf of Mexico, is brought in direct

contact with one or the other of the proposed roads, and from the western frontiers of the States lying west of the Mississippi, connexions are easily made with roads already completed to the cities on the Atlantic seaboard.

By thus combining all the great interests of the country, an effort has been made to allay sectional jealousies and to bind together more firmly every part of the country.

The policy of granting lands, or the proceeds of the sales thereof, for the purposes of internal improvements, and to increase the value of the public property, was early adopted by our government. By the act of April 30, 1802, one twentieth of the net proceeds of the sales of the public lands lying within the State of Ohio was set apart to "be applied to the laying out and making public roads, leading from the navigable waters emptying into the Atlantic to the Ohio, to the said State and through the same; such roads to be laid out under the authority of Congress, with the consent of the several States through which the road shall pass." By the act of May 1, 1802, it is provided "that it shall and may be lawful for the Secretary of the Treasury to cause to be viewed, marked, and opened, such roads within the territory northwest of the Ohio, as, in his opinion, may best serve to promote the sales of the public lands in future." Both these acts were approved by Mr. Jefferson, and form the basis on which all similar acts have been predicated. Every Executive since that time approved of similar acts, and the only change made was in the manner of making the grant, the lands having been given instead of the net proceeds of the sales thereof. The plan thus proposed precludes the necessity of entering into an estimate of the expense to be incurred in constructing any of the proposed roads. Nor does it matter how many roads are thus authorized to be constructed. If built, they will open up a vast extent of country to settlement, and thus the government and the people will be mutually benefited. If the roads should not be built within the time specified, the lands revert to the government, and the parties take nothing by the grant. Nothing is given without a corresponding benefit is to accrue.

As a means of military defence, the Secretary of War, in his last annual report, has placed this measure in such a strong point of view that your committee have thought proper to make the following extract. Alluding to our Pacific possessions, he says: "This territory is not more remote from the principal European States than from those parts of our own country whence it would derive its military supplies; and some of those States have colonies and possessions on the Pacific which would greatly facilitate their operations against it. With these advantages, and those which the attacking force always has, of choice of time and place, an enemy possessing a considerable military marine could, with comparatively little cost to himself, subject us to enormous expenses in giving to our Pacific frontier that protection which it is the duty of the general government to afford. In the first years of a war with any great maritime power, the communication by sea could not be relied upon for the transportation of supplies from the Atlantic to the Pacific States. Our naval peace establishment would not furnish adequate convoys for the number of

storeships which it would be necessary to employ, and storeships alone, laden with supplies, could not undertake a voyage of twenty thousand miles, passing numerous neutral ports, where an enemy's armed vessels, even of the smallest size, might lie in wait to intercept them. The only line of communication, then, would be overland; and by this it would be impracticable, with any means heretofore used, to furnish the amount of supplies required for the defence of the Pacific frontier. At the present prices, over the best part of this route, the expense of land transportation alone, for the annual supplies of provisions, clothing, camp equipage, and ammunition for such an army as it would be necessary to maintain there, would exceed $20,000,000; and to maintain troops, and carry on defensive operations under those circumstances, the expense per man would be six times greater than it is now. The land transportation of each field twelve-pounder, with a due supply of ammunition for one year, would cost $2,500; of each twenty-four-pounder and ammunition, $9,000; and of a sea-coast gun and ammunition, $12,000. The transportation of ammunition for a year for 1,000 sea-coast guns, would cost $10,000,000. But the expense of transportation would be vastly increased by a war, and, at the rates paid on the same articles during the last war with Great Britain, the above estimates would be trebled. The time required for the overland journey would be from four to six months. In point of fact, however, supplies for such an army could not be transported across the continent. On the arid and barren belts to be crossed, the limited quantities of water and grass would soon be exhausted by the numerous draught animals required for heavy trains, and over such distances forage could not be carried for their subsistence. On the other hand the enemy would send out his supplies at from one-seventh to one-twentieth the above rates, and in less time—perhaps in one-fourth the time—if he should obtain command of the isthmus routes.

"Any reliance, therefore, upon furnishing that part of our frontier with means of defence from the Atlantic and interior States, after the commencement of hostilities, would be vain, and the next resource would be to accumulate there such amount of stores and supplies as would suffice during the continuance of the contest, or until we could obtain command of the sea. Assigning but a moderate limit to this period, the expense would yet be enormous. The fortifications, depots, and storehouses, would necessarily be on the largest scale, and the cost of placing supplies there for five years would amount to nearly one hundred millions of dollars. In many respects the cost during peace would be equivalent to that during war.

"The perishable character of many articles would render it perhaps impracticable to put provisions in depot for such a length of time; and, in any case, there would be deterioration amounting to some millions of dollars per year.

"These considerations, and others of a strictly military character, cause the department to examine with interest all projects promising the accomplishment of a railroad communication between the navigable waters of the Mississippi and those of the Pacific ocean. As military operations depend in a greater degree upon rapidity and cer-

tainty of movement than upon any other circumstance, the introduction of railway transportation has greatly improved the means of defending our Atlantic and inland frontiers; and to give us a sense of security from attack upon the most exposed portion of our territory, it is requisite that the facility of railroad transportation should be extended to the Pacific coast. Were such a road completed, our Pacific coast, instead of being further removed in time, and less accessible to us than to an enemy, would be brought within a few days of easy communication, and the cost of supplying an army there, instead of being many times greater to us than to him, would be about equal. We would be relieved of the necessity of accumulating large supplies on that coast to waste, perhaps, through long years of peace; and we could feel entire confidence that, let war come when and with whom it may, before a hostile expedition could reach that exposed frontier, an ample force could be placed there to repel any attempt at invasion.

"From the results of the surveys authorized by Congress, we derive, at least, the assurance that the work is practicable; and may dismiss the apprehensions which, previously, we could not but entertain as to the possibility of defending our Pacific territory through a long war with a powerful maritime enemy.

"The judgment which may be formed as to the prospect of its completion, must control our future plans for the military defence of that frontier; and any plan for the purpose which should leave that consideration out of view, would be as imperfect as if it should disregard all those other resources with which commerce and art aid the operations of armies.

"Whether we shall depend on private capital and enterprise alone for the early establishment of railroad communication, or shall promote its construction by such aid as the general government may constitutionally give; whether we shall rely on the continuance of peace until the increase of the population and resources of the Pacific States shall render them independent of aid from those of the Atlantic slope and Mississippi valley, or whether we shall adopt the extensive system of defence above referred to, are questions of public policy which belongs to Congress to decide.

"Beyond the direct employment of such a road for military purposes, it has other relations to all the great interests of our confederacy, political, commercial, and social, the prosperity of which essentially contributes to the common defence. Of these it is not my purpose to treat, further than to point to the additional resources which it would develop, and the increase of population which must attend upon giving such facility of communication to a country so tempting to enterprise, much of which, having most valuable products, is beyond the reach of market."

Some of the considerations which bear upon the questions submitted to the committee, have thus been briefly suggested. But we do not deem it necessary to enter upon an extended argument to show either the constitutional power of Congress to aid the construction of the proposed roads, or its duty to exercise that power. The public mind has already formed its judgment on both these points. The public press, popular assemblies, and legislative resolutions, have spoken

with a concurring voice; and recent representative conventions of the Democratic party at Cincinnati, and the Republican party at Philadelphia, have, with most remarkable unanimity and emphasis, declared the will of the people on this subject in resolutions intended for our instruction. The committee have deemed it their duty to give effect to this general wish, and have examined with much care the various plans which have from time to time been proposed.

They have thought proper to change the provisions of the bill referred to them very materially—preferring to make the grants directly to companies whose interests and well-established ability give assurance that they will press the work forward to completion at the earliest day possible.

They therefore report the following bill, and recommend its adoption.

A BILL to provide for the establishment of railroad and telegraphic communication between the Atlantic States and Pacific Ocean, and for other purposes.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That for the purpose of aiding in the construction of a railroad and telegraphic communication from the western boundaries of Missouri and Iowa, north of the thirty-eighth and south of the forty-fourth degrees of north latitude, to some point on the navigable waters of the Pacific ocean, in the State of California, the railroad companies herein named, and their associates, successors, and assigns—that is to say, the Hannibal and St. Joseph Railroad Company, and the Pacific Railroad Company, of the State of Missouri; and the Burlington and Missouri River Railroad Company; the Philadelphia, Fort Wayne and Platte Valley Railroad Company; the Mississippi and Missouri Railroad Company; the Iowa Central Air-line Railroad Company; the Dubuque and Pacific Railroad Company; and the North Iowa Railroad Company, of the State of Iowa, and their associates, successors, and assigns—are hereby authorized to extend their said several roads from their western termini westwardly, through the territories of the United States, so as to form a junction with each other at some point near Fort Kearney, and not south of the same, or at such point as, after actual survey, may be agreed upon by all the parties constructing their several roads to said junction; and from the place of said junction they may conjointly extend a line westward to the eastern boundary of the State of California, and from thence, with the consent of the legislature of said State, to some point to be by them selected on the navigable waters of the Pacific ocean, and also connect by means of a branch railroad with the cities of Marysville, Sacramento, Stockton, and San Jose; and, to enable them to construct the same, together with a telegraphic line along each, there shall be, and hereby is, granted to each one of said railroad companies the right of way for one hundred feet in width along the entire line of each of said railroads (with land sufficient for all necessary sites for depots, watering places, and workshops) to the point of junction at Fort Kearney; and every

alternate section of land designated on the maps of the survey of the public lands (when made) by uneven numbers, for six sections in width on each side of said roads, for the entire length from their present western termini to said place of junction, to be held and conveyed as herein provided; and in all cases where the United States shall have disposed of any such lands, or shall from any cause be unable to convey a title thereto, the deficiency may be made up from the nearest vacant lands in like manner, by alternate sections, by the party or parties entitled thereto, from any unoccupied and unappropriated public lands belonging to the United States within the territories north of thirty-eight and south of forty-four degrees of north latitude; and from the place of said junction there is hereby granted to said companies, their associates, successors, and assigns, or to such of them as shall, within one year from the passage of this act, by an agreement in writing properly executed between them, and filed in the Department of the Interior, associate for the construction of said road westward to the navigable waters of the Pacific ocean, in the State of California, and the branch to San Jose, every alternate section of land designated on the maps of the survey, when made, by uneven numbers, for thirty sections in width on each side of the length of said road, commencing at the point of junction aforesaid, and extending to a point two hundred miles west of the same, and thence in like manner forty alternate sections in width on each side of said road to the western base of the Sierra Nevada range, and thence through the State of California, in like manner, six alternate sections of land per each mile of railroad, including the branch aforesaid, which lands may, at the request of the parties hereinbefore mentioned, be withdrawn from sale or entry, and if required so to be, shall be surveyed under the direction of the Secretary of the Interior, and be held and conveyed as herein provided; and in all cases where the United States may have disposed of any such lands, or shall from any cause be unable to convey a title thereto, or when such land shall be condemned by the United States surveyors as unfit to be surveyed, the deficiency may be made up in like manner by alternate sections, by the party or parties entitled thereto, from the nearest unoccupied and unappropriated public lands belonging to the United States north of the thirty-eighth degree of north latitude: *Provided, however*, That for such deficiency in the State of California, and also in lieu of all mineral lands in said State, (which are excepted from the grant herein made,) such selection may be made from any unoccupied and unappropriated lands of the United States, within the said State of California, lying north of the thirty-seventh degree of north latitude; but the grant of lands herein made to the State of California shall in no wise impair the right of the State of California, first to select such lands as said State is entitled to, and said selections to be made in accordance with the provisions of existing laws: *And provided further*, That the title to said lands shall vest in the parties aforesaid only as such roads shall be constructed, and no patent shall issue for said land except as each fifty miles of said roads shall be completed: *And provided further*, That any of the said companies which shall fail to construct fifty miles of road west of the Missouri river within three years from the

passage of this act shall not be entitled to any of the lands, but the lands thus forfeited shall be divided equally among the companies which shall within said time complete said length of road not to exceed six additional sections per mile to each of said roads. And to aid in the construction of a railroad from the city of Sacramento to the city of Benicia, a grant of public lands to the State of California, of the same amount per mile as is granted to aid in building a branch railroad to San Jose, is hereby made for the use of the San Francisco and Sacramento Railroad Company, upon the like conditions and limitations, and upon the further condition that the railroad shall be completed on or before the fist day of January, eighteen hundred and sixty: *And provided further*, That if the said Hannibal and St. Joseph and the Pacific Railroad Companies, of the State of Missouri, and the said Iowa Central Air-line, the Dubuque and Pacific, and the North Iowa Railroad Companies, of the State of Iowa, or either of them, instead of forming a junction with other roads at or near Fort Kearney, as before provided, shall desire to extend their respective roads, or if any two or more of them shall unite and conjointly extend one line of road on either side of said route, for the purpose of intersection with the road from Fort Kearney to the Pacific ocean, at some point further west than said Fort Kearney, they are hereby authorized so to do; and the same grant of lands per mile (that is to say, six alternate sections per mile) shall be extended to them respectively or conjointly, for each mile of railroad by them actually built, in the same manner as is provided in case of a junction at or near Fort Kearney: *And provided further*, That the extent of interest which each of the aforesaid companies shall acquire in the grant of lands herein made for the construction of a railroad and line of telegraph from Fort Kearney westward, to the western termini, by complying with the conditions contained in this act, as also the interest they shall thereby obtain in the construction of said lines from Fort Kearney westward, shall be in proportion to the amount of money each company shall actually pay in for the construction of such line or lines of railroad and telegraph.

SEC. 2. *And be it further enacted*, That the government of the United States shall at all times have the preference in the use of said roads and of all other roads provided for in this act, for transportation purposes, and also in the use of said lines of telegraph; and, as compensation for such uses, that is to say, for the use of such railroads for postal, military, and all other government purposes, and for the use of said telegraphs as well in time of war as of peace, the United States shall pay to the said parties, proprietors of said roads, a sum not to exceed five hundred dollars per mile per annum (unless otherwise provided by Congress) for the period of ten years from and after the entire completion of said roads, or at that rate for any portion of the same, should the government wish to use any part of said road before the whole line shall be completed; but should the government transportation and business on said roads be so great as, at the customary rates of charges on said roads, to exceed in value fifty per cent. of the sum proposed per annum, estimating the mail service at

three hundred dollars a mile annually, then the government will pay for such extra service an additional compensation to be fixed by Congress; but in this allowance the several railroads projected and herein named, till completed to the point of junction, shall be considered as one line of road and telegraph, and the payment to each shall be in proportion to the amount of work which such road shall do, the payment for mail matter to be equally divided between them; but should any of them fail, neglect, or refuse to unite, then the whole amount shall, in like manner, be paid to the remaining company or companies which shall construct the road as herein directed: *Provided, however,* That the government shall be forever entitled to the use of said roads and telegraph lines for the purposes herein designated, and at a rate of compensation not greater than that heretofore specified, unless otherwise provided by Congress: *And provided further,* That all the land hereby granted for right of way and the purposes of depots, watering places, and work-shops, shall be exempt from taxation in the Territories while they may remain such.

SEC. 3. *And be it further enacted,* That, if the parties shall fail to build the railroads and telegraph lines hereinbefore provided for within the period of ten years from the date of the location and establishment of the line, which location shall be made within three years from the passage of this act, or shall substantially fail, neglect, or refuse to prosecute the work undertaken by said parties in a manner to secure the completion thereof in the time stipulated, or should such parties violate the terms herein prescribed, then all the rights of the said parties to the uncompleted part of said road or right of way, the property thereto belonging, and the lands not patented, shall be forfeited, and the United States may and shall enter upon and possess the same. In the event of such forfeiture, to be determined by the Secretary of War, the Secretary of the Interior, and the Postmaster General, the said Secretaries and Postmaster General shall proceed to re-let the said roads and lines uncompleted under such forfeited contract, in such manner as, in their opinion, will secure their earliest completion; and for this purpose they are authorized to transfer everything thus forfeited, to said subsequent contracting parties; the United States to pay nothing more than is hereinbefore appropriated, and reserving all the rights and privileges hereinbefore specified.

SEC. 4. *And be it further enacted,* That all grants and contracts made in pursuance of this act for the construction and keeping up of said railroad and telegraphic lines are, and shall be, made on the express condition that said lines of railroad and telegraph shall be constructed in a substantial, thorough, and workmanlike manner, with all necessary drains, culverts, bridges, viaducts, crossings, turnouts, sidings, watering-places, and all other appurtenances, including the furniture of the road, equal in all respects to a road of the first class, when prepared for business, with rails of the best quality, weighing not less than sixty pounds to the yard, and of a uniform gauge; and shall also provide for and require a telegraph line with each road, of the most approved and substantial description.

SEC. 5. *And be it further enacted,* That there shall be, and hereby are, granted to the States of Louisiana, Arkansas, and Missouri, severally, ten alternate sections of land per each mile of railroad, and on each side thereof, to aid in the construction of railroads and telegraph lines from New Orleans, via Opelousas, to Shrevesport; from Vicksburg, via Shrevesport, to the west boundary-line of Louisiana; and from the Iron mountains, in Missouri, via Little Rock, to Shrevesport, and to the railroads running westwardly from Cairo, Memphis, and Gaines' Landing, deducting so many acres therefrom as may have been granted heretofore for any part of any road or branch herein named. Fifty miles of each of said roads and branches shall be built within three years, and the remainder thereof shall be completed within five years thereafter, or the lands lying upon the unfinished portions of any road or branch shall revert to the United States. The title to the lands shall vest in said States respectively, in the manner prescribed in acts of Congress granting public lands to said States for kindred purposes, and subject to corresponding limitations and restrictions, except as modified or altered by the provisions of this act.

SEC. 6. *And be it further enacted,* That the several railroad companies authorized, or who may be authorized, by said States of Louisiana, Arkansas, and Missouri, severally, to construct railroads along the routes indicated in the preceding section, together with such company or companies as are or may be authorized by the States of Texas and California, severally, to construct a railroad or railroads along the route between San Francisco and Shrevesport, or such one or more of said companies as may elect to avail themselves of the privileges herein granted, are hereby authorized to construct a railroad from El Paso, or from some point between El Paso and Fort Fillmore, in New Mexico, upon the line separating that Territory from the State of Texas, to the State of California, and thence, with the assent of said State, to the city of San Francisco; and two branches—one to San Diego, and the other to a suitable point on the Pacific ocean, or to navigable waters leading thereto. The company or companies electing to build said railroad shall file, within twelve months from January next, in the Department of the Interior, their written acceptance of the grant herein contained, and within three years thereafter shall build and equip not less than fifty miles of said road. And, to aid in the construction of said railroad and telegraph line, there are hereby granted to said company or companies thus filing as aforesaid their acceptance of the provisions of this section, upon the conditions, limitations, and restrictions stated in this act, forty alternate sections of land per mile of road, lying on each side of said railroad, beginning on the boundary line of the State of Texas, in the Territory of New Mexico, and extending to the one hundred and eighteenth degree of longitude west from Greenwich, and from thence, ten sections per mile, to the terminus of said road, and the same quantity of land per mile to aid in the construction of each of the two branches thereof. And all privileges as to right of way, donation of lands, and of all other kinds whatsoever, granted to the company or companies authorized by this act to construct a railroad westward from Fort Kearney, are hereby granted to and conferred upon the company or companies that shall undertake to con-

struct a railroad from Texas to San Francisco: *Provided, however,* That they shall also be subject to the same restrictions, limitations, and liabilities, as the company or companies authorized to build said railroad and telegraph line west from Fort Kearney. The pay for carrying the mail, freight, or persons, for the United States, shall be the same per mile an both routes; and whenever a railroad shall be completed from Shrevesport to New Mexico, the pay for carrying the mail, freight, or persons, for the United States over said road, shall be the same per mile, and subject to the same conditions, as stipulated to be paid for carrying the same on the railroad authorized to be built from Fort Kearney to California.

SEC. 7. *And be it further enacted,* That for carrying freight, mails, and persons for the United States, the railroads herein provided for within the States of Louisiana, Arkansas, and Missouri shall be allowed per mile the same rate of compensation, and be subject to like conditions, as directed by this act to be paid to the railroad companies authorized to build railroads from Fort Kearney east to the Missouri river.

SEC. 8. *And be it further enacted,* That the Pacific Railroad Company of Missouri may extend its Southwest Branch railroad from Springfield, with the assent of said State, to such point on the railroad from San Francisco to Texas as said company, after making the necessary surveys, may select; and to aid in the construction of said Southwest Branch railroad from Springfield to the Texas and San Francisco railroad there is hereby granted to said Pacific Railroad Company of Missouri one half of the quantity of public lands—reference being had to the number of miles of railroad to be built—which is granted by this act to aid in constructing the main road from San Francisco to Texas, together with similar rights, privileges, and immunities, (except as to the rate of compensation for services to the United States which shall be hereafter fixed by Congress,) and subject to the same restrictions, as said main road; deficiencies of land arising from like causes shall be made up in like manner as provided for by this act for the benefit of the road running west from Fort Kearney; fifty miles of said Southwest Branch railroad shall be built within four years, and the whole within fifteen years from the date of this act; no lands shall be sold by said company prior to the completion of twenty-five miles of the road, and then only so many sections as are granted for such twenty-five miles of road, and so on for each twenty-five miles of road as finished. If said company fails to complete said road within the time specified, the lands herein granted shall revert to the United States: *Provided,* That the company shall not be deprived of lands for so many miles of railroad as it shall actually construct, equip, and run, but only of the amount granted to aid in the construction of the portion of railroad remaining unbuilt: *And provided further,* That in no case provided for in this act shall patents for lands issue in advance of the actual completion of the portion of road in aid of the construction of which they were granted.

SEC. 9. *And be it further enacted,* That for the purpose of aiding in the construction of a railroad and telegraphic communication be-

tween the northern lakes and the Pacific ocean, north of the forty-fourth degree of north latitude, there is hereby granted to the Northern Lakes and Pacific Railroad Company, of which Alexander Ramsey is president, and to their associates, successors, and assigns, the quantity of twenty sections of land per mile for the length of this line of railroad and telegraph, from such eligible point as may be selected by them for their eastern terminus, near the lake or river St. Croix on the western boundary of the State of Wisconsin, by way of St. Paul, to the one hundredth degree of longitude west from Greenwich, and the quantity of forty sections per mile from said last mentioned point to such point on the navigable waters of Puget's sound as said company may select for the western terminus of said railroad and telegraph; and there is also hereby granted to said railroad company the quantity of forty sections of land per mile to aid in the construction of a branch line of railroad and telegraph, commencing on their main line at some suitable point, to be by them selected west of the Rocky mountains, and running to the Columbia river at or near the mouth of the Willamette river, in the Territory of Oregon; and the quantity of twenty sections of land per mile is also hereby granted to said company, to aid in the construction of a branch railroad and telegraph line from the main line of said Northern Lakes and Pacific Railroad, at such point east of the one hundredth degree of longitude, west from Greenwich, as said company may select, to some point on Lake Superior to be by them selected; but all the grants of land provided for in this section are to be taken with all the conditions, limitations, restrictions, and reservations, and the selections of lands shall be made in the same manner, as are prescribed and provided for in the grants herein made to aid in the construction of lines of railroad and telegraph between the thirty-eighth and forty-fourth degrees of north latitude.

SEC. 10. *And be it further enacted*, That if any railroad already located shall be used for any portion of the railroads herein provided for, then the lands heretofore granted by the United States to aid in the construction of such railroads shall be deducted from the quantity hereby granted to such road or portions of road: *Provided, however*, That if it should be found that the lands thus heretofore granted to any of the roads proposed to be extended under this act, to aid in its construction, shall fall short of the full amount intended to be appropriated thereto, then said road shall be entitled to make up the deficiency out of any unoccupied and unappropriated lands of the United States within the State or Territory in which such road is located; and on the approval by the Secretary of the Interior of the selections made by such company, he shall issue patents or certified lists therefor: *And provided further*, That if the parties hereinbefore named desire to lay down more than one tract, they are hereby authorized so to do.

SEC. 11 *And be it further enacted*, That the said lines of railroad and telegraph shall be kept in good repair and in good working order by the proprietors thereof; and for any unwarrantable delay in the transmission of messages, or the transportation of troops, stores, mails, and other things that may be required by the United States,

the said companies shall be subject to such fines and penalties as may be hereafter directed by law, and the same shall be deducted from the moneys to be paid for such services to the said companies or company. And the said companies or company shall severally make an annual report of the progress and condition of said roads and telegraphic lines respectively to the Secretary of War, and the Secretary of War may appoint any engineer of the United States to make the necessary examination, and report from year to year.

SEC. 12. *And be it further enacted*, That the lands hereby granted shall be exclusively applied in the construction of the roads for which they are respectively granted and selected, under the requirements of this act, and the same shall be applied to no other purposes whatsoever.

SEC. 13. *And be it further enacted*, That this act shall not be construed as applying to any lands hitherto reserved by the United States for any purpose whatsoever, or to lands in any manner selected or reserved by any competent authority under the provisions of existing laws: *Provided, however*, That the right of way, as hereinbefore provided, is granted through such reserved lands not in the actual occupancy by the United States for purposes inconsistent therewith: *And provided further*, That no road shall be located through any Indian reservation or Territory, except upon the written approval of the Secretary of the Interior, and the consent of the Indian tribe or tribes interested therein, previously obtained by the government of the United States.

SEC. 14. *And be it further enacted*, That the sections and parts of sections of land remaining to the United States on each side of the roads herein provided for, shall not be sold for less than double the minimum price of the public lands.

SEC. 15. *And be it further enacted*, That all minerals, whether of gold, silver, copper, tin, or quicksilver, shall be, and hereby are, expressly reserved and excepted in all grants or conveyances of lands made by the United States to any person or persons, company or companies, whatsoever; and Congress shall hereafter direct the manner of working such mines.

MINORITY REPORT.

JULY 24, 1856.

Mr. J. M. WOOD, from the Select Committee, gave notice that, at a proper time, he should submit the following minority report:

The undersigned, being one of the Select Committee to whom was referred the subject of the construction of a railroad from the Atlantic States to the Pacific ocean, and differing from the views entertained by a majority of that committee, asks leave to submit the following as a minority report:

It is admitted by all parties that it is desirable to have constructed, as speedily as may be, a railroad from the valley of the Mississippi river to the Pacific ocean. The agitation of this question during the past few years has necessarily had the effect of rendering the project somewhat familiar to the popular mind. The subject is unquestionably one which involves many difficulties, owing in part to the vastness of the country embraced within the limits explored, and the numerous and perhaps conflicting interests that are struggling for particular and favorite routes. The question, therefore, should be approached, as far as possible, without prejudice, and with the leading view of accommodating the largest possible portion of the community who are to be benefited by this great work. It may safely be said that a majority of the people now demand that the government of the United States should take early measures to provide for the construction of a wagon road and a railroad from some point in the Mississippi valley to the Pacific coast. Having given the subject some consideration, I have come to the following conclusions, namely:

That, to accomplish this object with certainty, and in a reasonable time, the government of the United States must furnish the cash means to prosecute the work. The mode in which these means may be furnished is indicated at the conclusion of this report.

That, in selecting a route for this line regard should be had to the geographical position of the thirty-one States of the Union relatively to each other as they are now formed and settled; and also to other lines of railway now leading to the Mississippi valley.

By an examination of the map of the United States, and tracing the different lines of railroad thereon designated, the converging termini of these roads will be found to be at a point on the Missouri river, somewhere between the parallels of thirty-nine and forty-one degrees of north latitude; and from such a point the road should be commenced at this end, and follow the most direct and practicable route to San Francisco. The harbor of San Francisco is acknowledged to

be the best on the Pacific coast; and that port is now the great centre of all the commercial relations of our western coast. The Columbia river at the north will in time become a point of importance as a commercial port for the inhabitants of Oregon and Washington Territories, and at the south we have the port of San Diego, with a good harbor, but less capacious than either of the others. It is believed, however, that no route can be made generally satisfactory, under the present state of things, which does not contemplate San Francisco as the terminus on the west, and at the east some point sufficiently central to accommodate the greatest amount of population and business enterprise. In this instance, as in all others of a like nature, the same rule of action should be observed which lies at the foundation of all success, namely, a due regard to the great centres of commercial enterprise and industry. Keeping this idea in view, it will be at once conceded that, other things being equal, this road, if built at all, should be built through such districts as will be most likely to concentrate the largest amount of population in the shortest time.

The explorations and surveys, reports of which accompany the report of the Secretary of War, are sufficient to decide upon what route the road should be built. There are undoubtedly preferences according to sectional localities; but, if only one road is to be built, the weightiest arguments would unquestionably tend to a decision in favor of a route which, if practicable, will accommodate the greatest amount of the busy population of the country.

The determination of a route for a railroad is not always to be governed by the facility or cheapness with which it may be constructed. If such were the case, many roads would be built in favorable localities where there are but limited means for their support.

The map and profiles accompanying the Secretary's report indicate five distinct routes from the Mississippi valley to the Pacific ocean.

Profile No. 1 is of the most northern line, commencing at St. Paul, and terminating either at Vancouver, or Columbia river, or Seattle, in Port Discovery, on Puget's sound.

Profile No. 2 is of a line commencing at Westport or mouth of Kansas river, passing through South Pass, and terminating at the same point as No. 1.

Profile No. 3 is of a line commencing at Council Bluffs, and going through the Cheyenne and Bridger's Passes of the Rocky mountains, and near Salt Lake, across the Great Basin, through Madeline Pass and Sacramento valley, to Benicia, in San Francisco bay.

Profile No. 4 is of the central route, through Sangre de Christo and Coo-che-to-pa Passes to the Great Basin, where the route was abandoned as impracticable.

Profile No. 5 is of a cross-route from Independence, Missouri, to El Paso del Norte.

Profile No. 6 is of a route from Fort Smith, passing near Santa Fé, and terminating at San Pedro.

Profile No. 7 is the southern route, from Fulton, through El Paso, El Dado, mouth of the Gila, and Gorgonia Pass, to Martinez, on an arm of San Francisco bay, opposite Benicia.

Profile No. 8 is a spur of the last-named route, commencing at Indianola, Texas, a harbor on the Gulf of Mexico.

The information contained in the report and estimates furnished by the Secretary of War would lead to the rejection of all these routes, except the 1st, 3d, and 7th—that is to say, the routes of the 47th, 41st, and 32d parallels of latitude.

On profile No. 2 there is no estimate or report, the minutes seeming to be made up by former reports not combined with the late surveys or explorations.

Profile No. 4 is left unfinished, and is declared impracticable.

Profile No. 5, a cross-line, is not suitable for the road in question.

Profile No. 6 is considered as too expensive, and is objectionable on the score of high grades.

From the reports it appears that the nature of the explorations will not admit of determining the amount of curvature upon any of these lines; and, as regards the estimates, probably no two of them were made by the same party—consequently no one standard of expense could have been assumed to govern all the estimates. This is exhibited in the fact that upwards of twenty millions of dollars were added to the estimates of Governor Stevens for the northern route, and a very large amount deducted from the estimates for the southern route; thus making the estimates for the northern line read $140,871,000, instead of $117,121,000, and reducing the estimate of the southern line to $93,120,000. The estimate for the route by the 35th parallel (profile No. 6) is left undisturbed at $169,000,000, though it is stated to be in excess of the probable cost.

The profiles of all these routes exhibit only the lines of average grades. Undoubtedly many undulations will occur in construction which are not at present represented. An analysis of what is given is shown in the following table:

	Total length of road.	Grades level and up to 30 feet.	Grades between 30 and 60 feet.	Grades between 60 and 90 feet.	Grades above 90 feet.	Maximum grade.	
						Length	Rate p'r mile.
	Miles.	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Feet.*
Profile No. 1, northern line.	2,025	1,761	264	....	....	25	60
Profile No. 2.....	2.152	1,903	95	38	116	3.5	324
Profile No. 3, central line..	1,988	1,747	164	71	6	3.6	125
Profile No. 6, and part of No. 7.....	2,298	1,837	219	101	141	3.5	188
Profile No. 7, southern line.	2,039	1,661	179	112	87	7.2	173

On an examination of this table, the extraordinary proportion existing among all the lines of somewhere about eighty-five per cent. of the length of each, consisting of gradients of thirty feet per mile and less to a level, will be apparent.

Profile No. 1, of the northern line, is very favorable, and must be allowed to be superior to all the others, both in its grades and the

small sum of ascent and descent. Were there no other questions to be taken into consideration, this route would certainly be preferable to all the others as regards facility of construction. The objections to it are, its high northern latitude, leaving almost the whole United States territory to the south of it; its requiring a tunnel at Cadotte Pass four and a half miles in length; its terminating in a remote corner of the country at a great distance from the commercial centre of the Pacific coast; and its high cost as given in the Secretary of War's report.

Profile No. 2 represents a line terminating at the same points as above, is longer than that of No. 1, and is more objectionable on account of its grades, thirty-eight miles of which rate from sixty to ninety feet per mile, and one hundred and sixteen miles rate from ninety to three hundred and twenty-four feet per mile.

Route No. 3—the central route, as respects grades—is second only to No. 1, and is greatly superior to any of the others. It has seventy-one miles, rating from sixty to ninety feet per mile, and only six miles above ninety feet per mile—the maximum grade being one hundred and twenty-five feet per mile; but that grade is only three miles and six-tenths of a mile in length. Besides, the whole of this extreme high grade is concentrated at the western pass of the Sierra Nevada mountain, and may probably be modified so as to be reduced to a rate of ninety feet per mile, or less. Indeed, it is stated in the report that a new, and apparently more feasible, route has been discovered since the report of Lieutenant Beckwith was made. The total rise and fall in this line is twenty-nine thousand one hundred and twenty feet.

Profile No. 6, continued to San Francisco bay by the western portion of profile No. 7, shows one hundred and forty-one miles' length of gradients ranging above ninety feet per mile, with a maximum grade of one hundred and eighty-three feet per mile for three and a half miles, and a total cost of $169,000,000.

Profile No. 7 represents the southern route two thousand and thirty-nine miles from Fulton to San Francisco bay. As respects grades, this line is much inferior to that of profile No. 3, the central line. There are one hundred and twelve miles having grades varying from sixty to ninety feet, and thirty-seven miles with grades above ninety feet per mile, to which must be added a maximum grade of one hundred and seventy-three feet per mile for a distance of seven miles and two-tenths of a mile. These high grades are distributed occasionally throughout the length of the line, rendering it necessary to stock a large portion of the whole length of the road with the heaviest and most expensive locomotives. Of the grades above ninety feet per mile on this route, we have those of 91, 93, 94, 95, 108, 115, 119, 132, 155, and 157 feet per mile, besides the maximum of one hundred and seventy-three feet per mile. The total rise and fall upon this line is forty-two thousand nine hundred and thirty-four feet.

Admitting that each of these three routes is suitable for the purpose of constructing a good and sufficient railroad, it must also be admitted that, as regards gradients, the northern line is superior to the other two; and as regards expense, the southern line is superior to the others. The manner of estimating, however, is open to criticism. It appears

that the standard of estimating has been fixed by likening the route to some well known railroad in operation in the North, such as the "Baltimore and Ohio," the "New York and Erie," the "Hudson River," &c. Now it is indisputable, that the same amount of work required on any of the above named roads could not be done as far south as the thirty-second parallel of latitude, by an equal number of men in the same space of time, nor at the same rate of expense. The climate is such that the amount of work done is less per day, and the rate of wages must also be somewhat higher. This must always greatly enhance the cost of any public work commenced so far south as the thirty-second degree of north latitude.

The Secretary of War objects to the northern line because it runs so near the territory of a powerful foreign government. Will not the same objection apply, in some measure at least, to the southern route also? Are we so weak as to express any fears on this account? Shall we not be better able to defend our frontier from the very fact that we have the means of transporting war material all along the line?

But the main facts which ought to decide the question of route have not yet appeared. Let us ask the questions, On what latitude is the great central mass of the population of this country situated? and in which direction is the current of the moving population pressing? The replies to these queries should have more bearing in determining the route than perhaps any other considerations, after the practicability of the three great routes is admitted. Referring to the map of the United States, and the last census, it will be found that the whole population is enumerated at twenty-three millions. Scanning closely the map of the United States, it will be perceived that every State north of Arkansas, Tennessee, and North Carolina, will be better accommodated by the central line than by any other. Considering St. Louis as a point of departure for the central line, it will be seen that Arkansas and Tennessee are equally as well accommodated by the central as by the southern line. The population of the States north of the States of Arkansas, Tennessee, and North Carolina, is upwards of seventeen millions—nearly three-fourths of all the inhabitants of the Union. (See table of States.) Even excluding New England, New York, Michigan, and Wisconsin, we yet have a population, centrally situated, of ten million five hundred and seventy-seven thousand, or nearly one-half of the whole. Every one who is familiar with railroad enterprises knows that it is the moving population which actually supports the system; and that a railroad, to be well supported, must be constructed on the line in which that population wishes to move. The population even north of the latitude of forty degrees is ten million eight hundred and eighty thousand—nearly one-half of the whole; and if we look upon the railroad map, we see most of the lines lying in an east and west direction, absolutely indicating the course of the greatest amount of travel. The amount of overland travel is already great on the central line, a fact which cannot be shown in respect of either of the others. The communication of the Mormons, both east and west, is also large. The Mormon settlement, situated as it is, must be a great aid in the construction and support of a railroad to the Pacific.

Again, the central line is the shortest between the two great commercial cities on the Atlantic and Pacific coasts. This is shown by the following statement of distances:

	Miles.
From New York to Benicia, via central line, is.....	3,240
From New York to Martinez, via southern line, is.....	3,647
From New York to Vancouver, via northern line, is 3,054 miles; and adding 580 miles to Benicia, not yet surveyed, we have a total of.....	3,634

Here is a distance of about four hundred miles in favor of the central line, or nearly a ninth part of the whole distance.

The northern line does not accommodate the State of California at all without an addition of about 580 miles parallel to the seacoast to carry the line to San Francisco bay.

Objection has been made in some quarters to northern and central lines on account of the deep snows common to high northern latitudes. This objection has some plausibility when we take into consideration the manner in which roads were located and constructed in the old States some years ago; but the observation and experience of later years have taught engineers, and those having charge of locations, the necessity of elevating their road-beds much higher than was formerly the practice; thus avoiding the evil consequences attendant upon hugging the surface of a level plain too closely. This improved elevation has resulted in entire relief from the effects of snows, as experience has shown, besides producing a better drainage, and not adding materially to the cost of construction.

Taking a broad view of the whole matter, the construction, the condition when built, the amount of population to be accommodated, and the amount of moving population to support the road, added to various other considerations not here enumerated, there would seem to be no question as to the vast preponderance of the reasons in favor of the central line.

A further survey, however, for a final location will be necessary, and this, it is believed, could be best accomplished by a mixed commission of engineers. One-half of this commission should consist of gentlemen in the employ of the United States government, and the other half should be taken from the most eminent of the profession, who have heretofore been employed upon railroads and public works by corporations.

In the appointment of commissioners to superintend and take charge of the construction of the work, there should be appointed, in connection with the Secretary of War, a board of directors, or commissioners, consisting of not less than five, nor more than thirteen, practical, experienced men—men who have been engaged heretofore on works of a like kind. A portion of this board should be constantly on duty on the line of road.

Propositions should then be called for, and 200 miles of road at each end be placed under contract simultaneously, and the further progress should be as rapid as prudence and circumstances would permit.

For the purpose of meeting the expenditure necessary to carry on this work on the part of the government, an appropriation of one hundred millions of dollars should be made by Congress, to be supplied in the following manner, namely: That all surplus money in the United States treasury, after defraying the ordinary current expenses of the government, should be appropriated to this use; and further, that, if necessary, bonds of the United States government, having thirty years to run, and bearing five per cent. interest, should be issued in such annual amounts as the requirements of expenditure on the work might demand.

For the redemption of these bonds at maturity, the public lands of the United States, not otherwise appropriated, should be set apart; and from and after the first of July, 1857, a sinking fund should be established for this purpose, to be made up of the avails of these lands as rapidly as they are disposed of.

In accordance with the foregoing views, the undersigned has prepared a bill, which he herewith submits, embodying the principal ideas expressed in this report. Many important matters of detail are necessarily omitted as being only fit subjects for consideration when the question itself shall come up for discussion in the ordinary course of legislative business.

The chief object of the undersigned has been to foreshadow what he believes to be the only feasible and practicable method of commencing and carrying on to completion this great national work—a work demanded alike by the requirements of a great majority of the people of the United States, and by all the exigencies and interests of every section of the country.

JOHN M. WOOD.

A BILL to provide for the construction of a wagon road, a railroad, and a telegraphic line of communication from a point on the Missouri river, between the thirty-ninth and forty first degrees of north latitude, to the Pacific ocean, at or near the city of San Francisco, in the State of California.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of constructing a wagon road, a railroad, and a telegraphic line of communication from a point on the Missouri river, between the thirty-ninth and forty-first degrees of north latitude, (said point to be finally determined as hereinafter provided,) to the Pacific ocean, at or near the city of San Francisco, in the State of California, the sum of one hundred millions of dollars shall be, and is of the United States, or by the issuing of bonds of the government of hereby appropriated, out of any moneys in the treasury of the United States not otherwise appropriated, or which may hereafter be in the said treasury of the United States not otherwise appropriated, or which may hereafter accrue to the said treasury of the United States in such amounts and proportions as may be required, as is hereinafter provided.

SEC. 2. *And be it further enacted*, That, for the purpose of superin-

tending the construction of the said wagon road, railroad, and telegraphic line of communication, and the disbursement of the said sum of one hundred millions of dollars, the President of the United States, by and with the advice and consent of the Senate, shall appoint nine suitable persons who have had experience in the construction of works of a like nature, who shall be styled "Commissioners of Construction and Disbursements," and who shall receive out of the treasury of the United States, for their services, an annual compensation not exceeding ——— thousand dollars each: *Provided always*, That in case of malfeasance in office, or other disqualification on the part of any of the said commissioners, he or they may be removed by the President of the United States, and the vacancy or vacancies thereby occasioned shall be filled by new appointments by the President of the United States, which appointments shall remain in force until they are confirmed or rejected by the Senate: *And provided further*, That in case of the death or resignation of any of the said commissioners, the President of the United States may fill the vacancy or vacancies thereby occasioned in the same manner as is provided in the next preceding proviso.

SEC. 3. *And be it further enacted*, That, for the purpose of making an immediate and final location of the said wagon road, railroad, and telegraphic line of communication, the Secretary of War is hereby authorized and required to appoint four persons from among the most eminent engineers now in the service of the United States, to act in conjunction with five other suitable persons to be selected by the President of the United States, who is hereby authorized, by and with the advice and consent of the Senate, to appoint the same from the most eminent engineers not in the service of the United States; and that on the recommendation of, or agreement upon, any particular location by a majority of the said engineers, the commissioners aforesaid shall accept the said location, and thenceforth and thereon proceed to the construction of said wagon road, railroad, and telegraphic line of communication in the manner provided for in the next following section of this act.

SEC. 4. *And be it further enacted*, That the location of said wagon road, railroad, and telegraphic line of communication being determined upon as aforesaid, the said commissioners shall cause proposals for contracts to be published in at least one principal newspaper in each State of the Union, for the construction of not more than two hundred miles of said roads and telegraphic line of communication at each end of the said line; and the said proposals for contracts shall appear at least sixty days in the said newspapers prior to the letting of said contracts, which, in all cases, shall be let to the lowest bidder who shall give sufficient security for the due and faithful performance of the same; and that, as speedily as circumstances will permit, the said commissioners shall put additional sections under contract, until the whole is completed.

SEC. 5. *And be it further enacted*, That, for the purpose of meeting the current expenditures in the construction of the said roads and telegraphic line of communication, all surplus money in the United States treasury remaining therein, over and above the amounts ap-

propriated by Congress to meet the current expenses of the government, shall be subject to the drafts of the said commissioners, or of some one or more of them duly authorized by the whole, to meet the monthly estimates as certified to by the engineers in the immediate charge of the works; and that, in case the said surplus should at any time be inadequate to meet the requirements of said current expenditures, the Secretary of the Treasury be authorized and required to issue bonds of the United States, in sums of not less than one thousand dollars, payable in thirty years from date, and bearing interest at the rate of five per centum per annum, from time to time, according to the amounts required to meet the said estimates.

SEC. 6. *And be it further enacted*, That to secure the redemption of the aforesaid bonds at maturity, all the public lands not otherwise appropriated, belonging to the United States, from and after the first day of July, one thousand eight hundred and fifty seven, shall be set apart, and the moneys accruing from sales thereof shall constitute a sinking fund to be appropriated to that purpose, and to no other whatever.

MINORITY REPORT.

JULY 24, 1856.

Mr. KIDWELL, from the Select Committee, gave notice that at a proper time he would submit the following minority report:

The undersigned, a member of the Select Committee, appointed on the 21st day of February, 1856, to inquire into the propriety and expediency of building, or aiding to build, one or more railroads from the Mississippi river to San Francisco, on the Pacific ocean, dissenting from the opinions of the majority of the committee, begs leave to submit the following report:

In considering this subject the undersigned has carefully inquired—

1st. Is a railroad between the settlements upon the Pacific coast and those upon the banks of the river Mississippi *desirable?*

2d. Is a railroad (between the points named) *feasible*, at a first cost for construction, and a subsequent cost for maintenance, which is at all reasonable?

3d. If a railroad between the said points is, from any cause, desirable, and is feasible, is it *politic* for the government of the United States (admitting it has the constitutional authority to do so) to forestall individual enterprise, and construct a railroad for the accommodation of trade and travel?

4th. If it is *impolitic* for the United States to engage in a competition with its own citizens, in the business of building railroads for the use of persons engaged in the business of trade and travel, can the United States, with propriety, and with advantage both to the government and to the trading and travelling classes, construct a national military road, or a postal road, and then lay rails upon it for the use both of the government and of traders and travellers?

5th. Admitting a railroad from the Pacific ocean to the Mississippi river is desirable; that it can be easily and cheaply built; that it is politic, in this particular case, to interfere with the individual and State enterprise which has constructed the railroads and canals of this country; that there is propriety and wisdom in the construction of a national military and postal railroad to be used in copartnership, or in common, by government and by individuals; *has the government of the United States constitutional authority* to push individuals, Territories, or States out of its way, and enter upon the construction, control, and management of a railroad for the use and benefit either of traders or of mail contractors? Has government constitutional authority to build other than a military road, for strictly military purposes, in that confined and exclusive sense which defines the military purposes of forts, ships of war, government arsenals, and government foundries, and dedicates them to *exclusive* military uses? Under the plea

of providing a military, can Congress constitutionally proceed to construct a commercial road?

In the outset the committee was called upon to consider whether—

First. A railroad from some suitable point or points upon the Pacific ocean to corresponding ones upon the Mississippi river is *desirable?*

Upon this point the undersigned has no doubt whatever. Good railroads from New Orleans, St. Louis, Chicago, and from the head of Lake Superior, across the continent, within our own country, to San Diego, San Francisco, mouth of the Columbia, and Puget's sound, would, in peace and in war, be productive of consequences the most beneficent both to individuals and to the nation, to agriculture and to commerce, to manufactures, and to the mechanic arts.

Like the railroads to the east of the Mississippi, those west of it would be a military protection and a commercial convenience of a higher character than any known to the ancients. One or more railroads to the Pacific from the Mississippi may, therefore, be justly considered not only *desirable*, but exceedingly important, in every national point of view.

Second. Is a railroad between the Pacific and the Mississippi *feasible*, at a *reasonable* cost for original construction and subsequent support?

Upon this point there is a decided difference of opinion between a majority of the committee and the undersigned. That a railroad can be built over, or even *through*, almost any mountain in this country, by an able engineer who has at his command ample means and modern science, there can be but little doubt. I think it *possible*, perhaps, to build a railroad hence to the Polar sea, or even up the lofty heights of the Coochetopa Pass of the Rocky mountains. But there are many mountains in this country over the heights of which a railroad cannot be built at a reasonable cost, or with suitable grades and curves, or that could be profitably used in the summer, or *at all* in the winter.

After bestowing much labor upon the investigation of this branch of the subject, the undersigned is convinced that no route has yet been discovered to exist in this country, between the northern boundary line of Mexico and the southern boundary line of the British possessions, where a railroad from the Pacific to the Mississippi can be located with such grades and curves, and constructed at such a cost, as would justify either the government, or individuals, in attempting to build it, and rely upon its earnings to keep it in repair and pay for the use of the money expended even *one* per cent. per annum upon the first cost of the road. Nay, it is exceedingly doubtful whether a road located upon the best known route could be maintained from its earnings during the first ten or fifteen years, even should its builders be willing to *sink all their capital*, and abandon the road to whomsoever would give security to maintain and run it. And at the end of that period of time, money would have to be obtained to rebuild the whole railroad—to replace the iron rails, the ties, and the furniture of the road. Could the debt which this necessary re-construction would cause to be created, be paid within the next then ensuing ten or fifteen years from the mere earnings of the road? And, in that period, would the

earnings also furnish the further large sum with which to *again* rebuild the road? For experience teaches that ten or fifteen years is the average period of time such materials last, after which a rebuilding must follow.

Many reasons exist, some temporary and others enduring, which induce the belief that such a railroad must be very costly to construct, very costly to maintain in an effective condition, and yet would produce but small sums of money.

Among these reasons, the chief one is undoubtedly to be found in the fact that vast sterile plains, and rugged, extensive, and uninhabited mountains interpose between the termini of the railroad, and *must be crossed.* No engineering skill can teach us how to avoid these arid plains, nor how to turn those lofty ranges of mountains, either on the right hand or on the left. The sand plains *must* be crossed, the mountains *must* be scaled. No route has yet been discovered, north or south, after numerous and most diligent explorations, whose mountain passes *are so low as one mile high above the level of the sea:* not one. All are *more* than one mile high.

So lofty, irregular, and rugged are these mountain ranges, it is difficult for an unpracticed writer to find language to convey an adequate idea of their real character. The whole mountain region appears as though it had been *uplifted* amid some great convulsion of nature; broken, irregular, often destitute of all vegetation, and rarely exhibiting even small sections fit for cultivation without a resort to *irrigation.* Water, timber, and grasses are found sufficiently abundant in some places to prove the existence of a soil suitable for agricultural purposes, but only at infrequent and distant intervals. Hundreds of miles may be traversed, *on this side of the Rocky mountains,* without finding timber fit to make even an axle-tree or an axe-helve. Throughout all that vast region of desolation, the cold and the hungry traveller finds no fuel even for the most common uses, save the dried dung of the animals who roam over it. Along the Platte valley route (a favorite one with the committee) for 600 miles upon this eastern side of the South Pass, there is an absolute destitution of timber for all useful purposes whatsoever; there is none with which to repair a car, or to replace even a cross-tie.

To show still further *the difficulty* of building a railroad through these solitary and uninhabited regions at *any* cost, and the improbability of its furnishing business to the road when built, it is only necessary to point to the absence of *water,* involving, as that lack does, a perpetual absence of agricultural pursuits in those desolate regions, and compelling the railroad to follow the endless sinuosities of the streams, in order to obtain a needful supply of the indispensable element. These streams are but few, and are wholly maintained by the snows of the mountains from which they come. A single glance at a map delineating the Platte river from its mouth to Fort Laramie, will show how greatly the length of a railroad between those points must be elongated, if it is necessarily located along the banks of that crooked river.

But other difficulties, besides these of the plains, exist in and among the stupendous mountains lying to the west of them. These consist, in part, of the vast altitude, not only of the mountains, but

also of the lowest passes through them, the narrowness, depth, and crookedness of the defiles, gorges, and canoñs, and the greater severity of climate. Even on the South Pass route, 705 miles lie in and among these mountains, between the Rocky and the Snowy mountains, which are *more* than 3,000 feet high in the lowest place.

If a railroad were constructed from Washington city to Boston upon a mountain ridge 1,000 feet higher than the present surface of the earth, the humblest individual, upon seeing it elevated above him, could readily comprehend its increased disadvantages in point of climate. Yet the extreme southern route, via El Paso, has 1,118 miles which are upwards of 1,000 feet high above the level of the sea. The extreme northern route (from Lake Superior to Puget's sound) has 1,555 miles at the same height; the Platte River and South Pass route has 1,818 miles; Col. Benton's route, through Coochetopa, has 2,015; and the St. Louis and Albuquerque route, 1,492 miles. The levellest has over 1,100 miles, and the highest more than 2,000 miles, which are more than 1,000 feet above the level of the sea.

Again: the most northern route (which is the levellest) runs over ground of the following elevations: 975 miles are at a height of more than 2,000 feet, 255 miles exceed 3,000 feet in height, 125 miles exceed 4,000 feet, *and* 28 *miles are more than* 5,000 *feet above the level of the sea.* Its loftiest pass is 6,044 feet high.

The southern route has 747 miles which are more than 2,000 feet high; 620 miles rise higher than 3,000 feet; 520 miles average 4,000 feet; and 28 miles are more than 5,000 feet above the level of the sea! Its loftiest pass is more than a mile high, being 5,727 feet high.

The St. Louis and Albuquerque route (Memphis route on the survey) has 1,153 miles which are above 2,000 feet high; 935 miles which are more than 3,000 feet high; 745 miles which are 4,000 feet high; 651 miles which are 5,000 feet high; 317 miles which are 6,000 feet high; and 25 miles which are 7,000 feet above the level of the sea! Its highest pass is 7,750 feet high.

The Platte river and South Pass route has 1,579 miles which are more than 2,000 feet high; 1,432 miles which are 3,000 feet high; 1,278 miles which are 4,000 feet high; 693 miles which are above 5,000 feet high; 391 miles which are more than 6,000 feet high; 119 miles which are more than 7,000 feet high; and 16 miles which rise above 8,000 feet above the level of the sea! Its highest pass is 8,373 feet high above the level of the sea.

Colonel Benton's route over the heights of Coochetopa it is not necessary to describe, it having been found utterly impracticable, being about TWO MILES HIGH. The highest pass yet discovered and measured on the North American continent is Coochetopa! The heights and depths of the adjacent mountains and valleys are of corresponding grandeur and impracticability.

It may be well to dwell a few moments upon these astounding geographical and topographical facts. The northern route has 125 miles about *three-quarters of a mile* high, and 28 miles about *one mile high.* The southern route has 520 miles about *three-quarters of a mile high,* and 28 miles about *a mile high above the level of the sea.* These

are the most favorable routes according to the official surveys. On the Platte River and South Pass route it is still worse, 1,278 miles exceeding a height of *three-quarters of a mile;* 693 are about *one mile high;* 391 miles are about *one mile and a quarter high;* and 16 miles are about *one mile and a half high above the level of the sea.*

And it must be recollected that the line run by the engineers is not *upon the top* of a mountain range, but, like all similar routes through lofty ranges, "it passes through gorges and narrow defiles, overhung by rocks and by mountain peaks of the most terrific altitude. These mountains, through and among which the asked-for railroad would run, are from 7,000 to 10,000, 12,000, and even 16,000 feet high. In two places the road would have to be upwards of 8,000 feet above the level of the sea. Amid these vast solitudes the snow must necessarily drift in heaps of mountain magnitude, and, it is said, lies unmelted during by far the larger half of the year. If the art of man could by any possibility contrive to remove, at a reasonable expense of time and money, these vast masses of snow, *it could not prevent a return of the labor* upon the recurrence of every wintry storm. And these storms must happen late in the spring as well as early in the fall; for the rains of the lowlands are indices of snows in the mountains. When it rains in the valleys it generally snows in the mountains, except in very warm weather."—(Ho. of Reps. Report No. 773, 1st sess. 29th Cong., on a railroad through the South Pass.)

In confirmation of these views the undersigned copies the following brief paragraph from the St. Louis Republican of May 30, 1856. It is embodied in a letter from its correspondent at Independence:

"The Salt Lake mail arrived here one day last week, but had been out some time, detained by snow and high water; and bringing but little news of interest, I thought it hardly worth to advise you."

Here it is; snows in the mountains and high waters in the plains below in April and May, *sufficient to impede the passage of mules and horses* conveying the mails through the passes of these formidable mountains, and over the rivers of the valleys. Nor is this a solitary instance in an extraordinary year. Such detentions, late in the spring and early in the fall, are neither new nor extraordinary occurrences. They are as certain as nature, and recur with the seasons which annually produce them. Aware of the depth of the snow, and its long continuance upon the ground, Colonel Benton proposes *to make use of it* instead of idly overlooking its existence. Knowing the usefulness of snow-shoes, dog trains, and sleighs, he long since recommended their use during the winter season. The length of time such appliances could be annually resorted to with profit was definitely ascertained and stated by that accurate senator more than thirty years ago, as appears from a debate in the Senate between him and Governor Dickerson, of New Jersey. Governor Dickerson had ventured to start some "difficulties" in the way of the execution of Colonel Benton's plans. In reply Colonel Benton thought there could be no *serious* difficulty in climbing mountains "whose aspiring summits present twelve feet of defying snow to the burning rays of a July sun. The passage through the mountains was *free from difficulty.* For *eight months* in the year *snow and sleighs* could be confidently

relied on." Five and twenty years afterwards, with all the lights before him which modern explorations had shed on the subject, Colonel Benton said, in a very elaborate senatorial speech: "Mails in an uninhabited country of more than two thousand five hundred miles, traversed by savages, and running over mountains of seven or eight thousand feet, where *deep snows lie for more than a thousand miles more than one half of the year*, could not be carried by a solitary conveyance of a contractor's man or boy. Four or five mounted riflemen, going together, and started from the different posts to relieve each other, alone could do it. In winter *they would have sleighs drawn by dogs*, the reliefs always being ready at each post. A non-commissioned officer and four or five men, relieved at each post, are *the only practicable mail carriers over such a line.*"

Since the delivery of that speech, a mail has been carried between Independence and Salt Lake, over the mountains, described so graphically, and in a manner somewhat like that stated. The sleds and dogs have not probably been used by the mail contractor, though in common use among the fur-traders.

But the snows are not obstructive in the Rocky mountains only; they are equally troublesome in the Sierra Nevada. Col. Fremont says: "The high waters came from the melting snows, which, during the past winter, had accumulated *to a great depth* in the mountains, *and, at the end of June,* lay in the approaches to the Bear River pass, on *a breadth of ten or fifteen miles*, and this *below the level of* 7,200 *feet.* In rainy seasons, when the rains begin with November, and *the snows lie on the mountains till July,*" &c. See Geographical Memoir, page 19. The same work, page 7, fixes the latitude of that pass at 39° 17′ 12″.

These facts show *why* Colonel Benton, in his "bill to provide for the location and construction of a central national road from the Pacific ocean to the Mississippi river," did not provide for the construction of a railroad *all the way.* He knew the rail-car could be used only in summer, and he expected to use "some other conveyance—the sleigh, for example—for that region, in *the time of the snows.*" Section 3d of his bill, in accordance with this his intention, begins thus: "And be it further enacted, that the said central and branch roads shall be iron railways, where practicable and advantageous, and *shall be macadamized, or otherwise constructed*, where not so practicable and advantageous."

But the bill of a majority of this committee provides for the construction of railroads, and railroads *only*, through the passes where Messrs. Benton and Fremont inform us the snows lie from six to eight months in the year, and where only dogs and sleds can be profitably used for the conduction of an East Indian business. Those gentlemen have explored the capacities of the several routes, and it is most respectfully submitted, whether, when *they* have pronounced in favor of dogs and sleighs, "in the time of the snows," all neophytes cannot by opponents be considered as fairly *concluded?* It is submitted whether, when *they* have decided for dogs and sleighs "where deep snows lie for more than a thousand miles more than one-half of the year," men of less knowledge of those vast mountain regions are

justifiable in attempting to induce an inexperienced Congress *to substitute engines and cars for dogs and sleds?* Whether it is *seemly* to attempt to beguile Congress into the making of an effort to substitute the railway for the dog-path, even among those extraordinary mountains, "whose *aspiring* summits present twelve feet of *defying* snow to the burning rays of a July sun?"

Not wishing, however, to appear anxious to limit the enterprising disposition of the majority, even when it seems to inconsiderately trample under foot the mountainous knowledge of Messrs. Benton and Fremont, nor even when adventuring to build railroads *a mile and a half high*, through regions where snow lies on the ground for a thousand miles during six continuous months of the year, the undersigned will not further press this point, but proceed to call attention to the difficulty of running a railroad on the plains *this side* of the Rocky mountains during several months of the year.

As Colonel Benton and Colonel Fremont are leading friends of a railroad, of course, when their evidence is unfriendly to the road, it is to be considered strictly reliable and conclusive against the road, for their attacks are necessarily unwilling attacks, and only made because truth compels them so to do. Speaking of the severity of storms on the plains, and of Colonel Fremont's skill in sheltering himself, Colonel Benton says: "He has been safe in his camp, in a grove of wood, during a snow-storm *which killed all animals on the prairie;* witness the loss of about a thousand head of government oxen returning from New Mexico in 1848, while he, in the same snow-storm, *sheltered by woods*, lost not an animal," &c., &c. This storm was south of the Platte river, south of the Kansas river, and upon a part of the plain only some 1,800 or 2,000 feet high. But suppose he had been caught *ten miles from timber*—it is not necessary to say 100 or 200 miles—neither Colonel Fremont *himself*, nor his oxen and mules, could have possibly have escaped alive from the horrors of that howling tempest. So rapid is the fall of the snow, and so resistless do the winds sweep over those almost boundless plains, it is quite impossible to gain a *distant* shelter.

So with a train of cars running up the plain from Iowa or Missouri to the foot of the Rocky mountains, a distance of some 800 miles, how, in a storm, is shelter, or wood, or water, or food, to be gained? Arrested 800 miles from Iowa in November, how is a train of cars to be relieved before May? By what means could it even be visited? In such a case the sheltering skill would be useless. To talk of doing business in the winter season on a road through such a region, though every conductor was a Kit Carson and every traveller a Fremont, would seem to be idle and preposterous. The attempt would soon make mule-meat fashionable, and "thrilling narratives" superabundant.

It is supposed that no one believes a railroad which can be used but from four to six months a year will prove a desirable and paying road.

As to the road from El Paso to California, the same high railroad authority, Col. Benton, says it passes over a country so sandy, sterile, and desolate, that a "*wolf could not make his living!*" Devoid of

water, fuel, soil, food, and population, it is indeed difficult to see *why* a costly road should be built across a country which few have seen and no one will inhabit. The swiftest riding for four and twenty hours on the fleetest horse may fail to convey the traveller to the residence of any human being; and this holds good of every route, north and south, recommended by the committee! If the "way business" is the chief reliance of every road in New York and New England, what can be expected of roads, the way business of either one of which, for a distance of 1,500 miles, would scarcely exceed the business furnished by the most insignificant county in the whole State of New York, along a line of 15 miles? Who expects a population of half a million of souls, including men, women, and children, to supply business enough to support *three* railroads, each road 2,000 miles long, running over mountains covered with snow, and across deserts of sand? That eminent friend of the scheme of building a railroad across those lofty plains, covered only with artemisia, and only inhabited, here and there, by wandering tribes who gain a precarious subsistence by digging roots and gathering snails, thus describes one portion of a route recently surveyed for a road: "Then comes the Mohahve, which it ascends and crosses ten times; a river of sand—swallowed up in sand—and percolating through a desert of sand, *rolling like the waves of the ocean under the action of the wind!* where neither man nor beast could lie down or stand still without being buried alive—but not to remain long alive—under a tumulus of sand!"

And yet this route, bad as Col. Benton considers it, is believed by Kit Carson (another Pacific railroad man) to be the *best* of any! If the best, what must be the characteristics of the worst? Carson says:

"I know but one route across the continent which can be travelled winter and summer, and over a remarkably level country, and that one must cross the Rio Grande del Norte within fifty or sixty miles of Sante Fe, and from thence as direct as the nature of the country will allow. There is *no manner of doubt* that the trail from Albuquerque by Zuni, along the headwaters of the streams that run into the Gila, and then crossing the Big river about the Mohahve, and so on, *is the easiest road that can be found.* Any old mountaineer, *that knows anything about it*, will say that the southern route through New Mexico is the best. *The South Pass I consider almost impracticable.* The *snows lie early and late*, in both the rocky and snowy mountain countries."

These authorities are quoted because friendly to the scheme. How terrible are the obstacles which they show to be in the way of building a railroad through these mountains and deserts! They are also quoted to show how unreliable and how contradictory are the authorities upon which Congress is called to act in a matter of such large public concern. Take this very route recommended by Kit Carson, the most skilful mountaineer in the world; not only does he and Col. Benton differ in their estimates of its availability and value, but great differences exist in the estimates of the engineers. At the last Congress the cost of the road from Fort Smith, by way of Albu-

querque, to San Francisco, was estimated at the sum of $175,877,265. It is now estimated at $94,720,000. Difference, $81,157,265.

Here is a reduction in one year, and without any materially additional surveys, of more than *eighty-one millions of dollars!* And we are told by the engineer in his report that "it is believed by him that the amount will be much diminished!"

Now, whether the first estimate was submitted in order to exhibit in favorable contrast the route a couple of hundred miles south of it, and the second one to conciliate those great central interests that had been injured by the first, or whether it was truly and verily a mathematical mistake of eighty-one millions of dollars, it is quite foreign from the purpose of the undersigned to inquire. The discrepancy exists. Nor is it intended to charge, nor to intimate, that the discrepancy cannot be accounted for in a manner consistent with the highest sense of honor; but it is intended to intimate, and to broadly assert, that when the friends of a gigantic measure, which threatens to involve our country in a huge national debt, admit the existence of natural obstacles of the gravest character on each route; when the engineers admit the existence of mistakes in their estimates to an amount of more than eighty-one millions of dollars, (an amount almost equal to the cost of the revolutionary war,) it is both proper *and called for* to refuse to act upon authority which may be so justly characterized as unreliable.

Even if a national railroad ought to be built by the general government, it were temerity to enter upon its construction with the present uncertain information now before Congress. Undoubtedly a road from Baltimore, by the way of Wheeling, Cincinnati, St. Louis, Albuquerque, and Zuñi, to San Francisco, would avoid most of the snows on the one hand, and most of the sandy plains on the other. Undoubtedly, too, it would well accommodate both sections of the nation. The temptation, on the part of rival routes, is very great to exaggerate the estimates of its cost. The temptation to cut down its cost is equally great on the part of its friends.

And yet this central route—the most fairly located of any to accommodate the mass of the people and the great cities, and therefore having far the most political strength of either route—is the route the estimates of the cost of which have been subjected to such a serious mistake.

If grave mistakes were committed on a route where more care and more labor would be likely to be bestowed upon estimates of cost than upon the estimates of cost of the less important routes upon each side of it, what reliance ought to be placed upon the estimates of cost made up *for routes of minor importance?* Surely greater care, greater labor, and greater pains-taking, were not likely to be bestowed upon the *lesser* objects than upon the greater.

Viewed in any aspect, reliance ought not to be placed upon the estimates submitted—certainly not to such an extent as to base action that will impose a national debt upon the people. This is proved by a moment's reflection. The Boston and Worcester railroad has been in existence about twenty years, and its *present cost* per mile is about $71,000, including equipment, &c. Now, if that road, with all its

conveniences of material and labor, has cost $71,000 per mile, will not the cost of a railroad amid those vast solitudes in the rocky and snowy mountains exceed the cost of the Boston and Worcester *twice* or *three* times, even at the end of *one* year's running, instead of twenty years? Take either of the roads—from Shrevesport, Springfield, Independence, or Council Bluffs, to San Francisco—the distance exceeds two thousand miles; at the cost of the Boston and Worcester railroad either road would cost one hundred and forty-two millions of dollars; at double the cost, would be two hundred and eighty-four millions of dollars; at three times the cost, the cost would be four hundred and twenty-six millions of dollars. The latter will be about the true cost of either road ten years from the date of its being sufficiently completed to be used—*for a railroad is never finished.* The Boston and Worcester railroad (probably the best managed road in this country) when put in use, in 1835, had cost $1,160,553; in 1853, the cost was $4,850,784. True, the company built branches twenty-four miles long, but they cost only some $595,000; thus increasing its cost *three times* in eighteen years, after deducting the cost of its branches! A road may be quoted as having been cheaply built, or dearly, and *both quotations may be true;* this is done by stating the cost at different periods.

It being evident that the cost of building and maintaining these Pacific railroads will ultimately be thrown upon the United States, if the bill of the majority of this committee shall become a law, it is deemed important that Congress shall have some positive knowledge of the *costliness* of the "bargain" they are buying, and hence the following official table is submitted; it thoroughly explains itself, and is most instructive:

The cost, mileage, cost per mile, gross receipts, current expenses, net receipts, receipts from passengers, receipts from freight, miscellaneous receipts, earnings per mile, per centage of gross and net earnings, from the completion of the road to November 30, 1853, have been as follows:

Year.	Cost.	Mileage.	Cost per mile.	Gross receipts.	Current expenses.	Net receipts.	Rate of dividend.	Receipts from passengers.	Receipts from freight.	Miscellaneous.	Earnings per mile.	Per centage of gross earnings.	Per centage of net earnings.
1835.....	$1,160,556	44⅝	$26,005	$119,100	$60,212	$48,888	6	$95,279	$53,821	.....	$2,669	10	4
1836.....	1,500,000	47⅝	31,491	175,185	89,135	86,050	6	120,788	54,393	.....	3,678	12½	5¾
1837.....	1,500,000	47⅝	31,491	210,047	94,762	115,285	6	123,331	86,716	.....	4,412	14	7½
1838.....	1,710,214	47⅝	35,800	212,324	89,325	122,999	7½	112,032	94,827	$5,466	4,458	12½	6
1839.....	1,848,085	47⅝	38,800	231,807	122,572	109,235	6	122,496	106,251	3,060	4,867	12⅛	6
1840.....	1,994,980	47⅝	41,889	267,547	140,441	227,106	6	170,885	92,819	3,873	5,617	19½	6⅓
1841.....	2,374,547	47⅝	49,859	310,807	162,998	147,809	7	190,097	110,001	10,709	6,515	12⅔	6⅓
1842.....	2,764,396	47⅝	58,045	349,207	168,510	180,697	7	186,610	148,189	14,408	7,332	13½	6¼
1843.....	2,836,200	47⅝	59,557	383,367	206,641	176,726	6	207,267	162,650	13,444	8,948	14⅔	6⅔
1844.....	2,914,078	47⅝	61,187	426,403	233,264	193,139	7½	234,634	175,996	17,807	8,953	16¾	8
1845.....	2,900,000	47⅝	60,892	487,455	249,729	237,726	8	241,219	233,505	12,731	10,237	16	8
1846.....	3,485,232	51½	67,694	554,712	283,876	270,836	8	279,793	260,165	14,754	10,771	17	9
1847.....	4,113,609	52¾	77,983	722,170	381,986	340,184	10	304,580	374,663	42,927	13,690	16½	8¼
1848.....	4,650,392	66¼	70,345	716,284	381,917	334,367	8½	332,886	359,073	24,325	10,801	15⅓	7¼
1849.....	4,908,332	68¼	71,915	703,361	405,551	297,810	6	330,606	331,338	41,417	10,616	14⅔	6
1850.....	4,882,648	68¼	71,540	757,947	377,041	380,906	6½	397,249	330,780	29,917	11,450	15½	8
1851.....	4,862,748	68¼	71,249	743,922	414,109	329,813	7	403,362	318,933	21,627	11,229	15⅓	6¾
1852.....	4,845,966	68¼	71,032	758,819	427,522	331,297	7	424,714	314,944	19,162	11,454	15½	7
1853.....	4,850,784	68¼	71,073	887,219	455,528	431,691	7	481,222	382,558	23,439	13,392	18	9
	60,002,848	.....	.....	9,017,683	4,745,740	4,262,564	133	4,790,646	3,991,622	299,067	.....	19)276½ Av. 14.527	19)133 Av. 7

As in the case of the Boston and Worcester railroad, so would it be with the Pacific railroads—the steady increase of the cost would be as "reliable," and could as safely be counted upon as Colonel Benton's twelve feet of "defying snow to the burning rays of a July sun." If that road, under good management, increased its cost 300 per cent. in fifteen years, the Pacific roads would certainly do no better, and probably would *do far worse*. Supposing one of them built for 200 or 300 millions of dollars, *the same sum*, if it was managed as well as the Boston and Worcester road, *would have to be expended every five years*. If not as well managed, the expenditure would be far more.

This becomes serious when it is known that it is *impossible* for the earnings of the road to pay its annual expenses. Could it for a few years pay 7 per cent. dividend per year, after paying all expenses, as in the case of the Boston and Worcester road, it might go on for a few years, perhaps, but bankruptcy would surely overtake it. No railroad company can long escape insolvency if every five years a sum equal to its entire first cost must be added to its aggregate cost. And if a well-managed road in New England did not escape this necessity during the first fifteen years of its existence, how can we reasonably expect a railroad to do better that is managed by remote, ill-regulated, and irresponsible subordinates, amid the Rocky and Snowy mountains, one, two, and three thousand miles distant from the controlling power at Washington city—especially when both superior and inferior managers were appointed by politicians, in reward for past, and in expectation of future, political services? It is believed to be preposterous to suppose that efficiency and economy could possibly flow from such a source in political times like the present. And, besides, while a rigid supervision may be maintained over a road only forty-four miles long, where every employee, of all grades of service, is daily under the eye of stockholders, as well as directors, such effective supervision cannot be had, on any terms, when the employees are far removed from such an all-pervading influence, and such a multiplied oversight.

But to return. The cost of the Boston and Worcester railroad (44⅝ miles long) was, in 1855, including equipments, $4,865,439 03; the cost of the Pennsylvania railroad (248 miles long) was, in 1855, $10,245,000, and the outfit $2,900,000—total cost, $13,145,000; the cost of the Baltimore and Ohio railroad (379 miles long) was, in 1855, including equipments, real estate, and $996,777 26 expended on a second track, $22,760,205 05; the cost of the New York and Erie railroad (460 miles long) was, in 1855, including equipments, $33,742,817 11; the cost of the New York Central railroad (297 miles long) was, in 1855, including equipments, $27,360,731 05; the cost of the Western railroad, Massachusetts, (155 miles long,) was, in 1855, including equipments, $10,495,504 96.

The total length of these six railroads, more important, and located amidst a more dense population than any other six railroads in the United States, is 1,589 miles. Having command of labor, food, materials, and skill, on the best possible terms, upon the very line of the roads, and throughout their extent, their builders constructed them

at far cheaper rates than can be hoped for upon the sand plains, or upon the snowy mountains, far distant from the habitations of men. And yet the cost of building and equipping those 1,589 miles, in the best part of the country, was $112,369,697 20 ! which is over $70,000 per mile, and but a very small part of it double track !

In the face of this experience of the cost of building railroads in the most populous portions of the United States, the engineers have submitted official statements, estimating the cost of building a railroad from Fulton, in Arkansas, through Texas, over waterless sand-plains and across lofty mountains, 2,075 miles, to San Francisco, in California, at the sum of $87,990,000 ! They officially state, for our official guidance, that, in their opinions, a road 480 miles longer than those six railroads, and at $24,379,697 20 less cost than what we know those six roads cost, can be built across those uninhabited, barren, and irregular mountains !

They also estimate that the shortest southern route, (from Fort Smith to San Francisco,) which is 2,025 miles long, can be built for the sum of $94,720,000. This road is 436 miles longer than the six roads referred to, and yet they estimate that it can be built for $17,649,697 20 less money !

Without the examination of a single figure to see wherein the engineers have erred, does not the judgment of every well-informed man instruct him at once that such estimates cannot be relied upon by any considerate person ? Who would take stock and expend his money in furtherance of a scheme based upon estimates so entirely at war with all the experience of railroad men, especially if the estimates were made by army engineers, who have had no practical acquaintance with the business of railroad building ? And shall the nation be less considerate in the appropriation of its money than individuals ? Surely not.

The undersigned has heard no practical railroad man estimate the cost of constructing a railroad upon the deserts and in the mountains, far removed from the labor and the materials which have to be conveyed there *from the ends* of the road, at so low a price as twice the cost of building the best roads in the eastern States, where materials, labor, and food are close at hand. A road 2,075 miles long, at only $70,000 per mile, (which is the average cost of the six large eastern railroads,) would cost $145,250,000, instead of costing only $87,990,000, as estimated by the engineers, for the guidance of Congress ; and the road 2,025 miles long, at $70,000 per mile, would cost $141,750,000 ; whereas the latest estimates of the engineers tell us it can be built for $94,720,000.

But it is not believed that either of the two roads can be built for $70,000 per mile. A double-track road—and no other could be safely used in deserts and mountains far removed from the abodes of men—cannot, in the opinion of the undersigned, be built and suitably equipped for the transaction of a business gigantic enough to pay legal interest upon its cost, short of $140,000 per mile ; it is not at all certain that it can be built for double $70,000 per mile—$140,000 per mile. It is difficult to conceive at what cost cross-ties and rails can be conveyed hundreds of miles ; at what cost grading, embanking,

and blasting can be done, when laborers, and food, and tools, *are to be conveyed more than a thousand miles.* Having no experience to teach us, we are compelled to wander in the wilderness of conjecture. If the experience of the United States in conveying stores high up the plains is in any way applicable, it would teach us that the cost of heavy articles is largely multiplied by the mere expense of transportation. The opinion is entertained that all estimates of cost of public works in distant mountains and sultry deserts are in danger of being *too low* rather than too high ; the tendency of the mind is to constantly refer to similar work done elsewhere, though the surrounding circumstances may be wholly unlike. No hesitation is felt in placing upon record the opinion, that no railroad 2,000 miles long, from the valley of the Mississippi to San Francisco, upon *any route whatever*, can be built and stocked for $100,000 per mile—$200,000,000. For however cheaply built, the road will require an immense stock to enable it to have sufficient capacity to earn interest upon the prodigious expenditures of money its building will necessarily involve.

A few additional thoughts, and the subject of the *feasibility* of building a railroad from the Pacific across the mountains to the Mississippi river, at a remunerative cost, will be dismissed.

Suppose a railroad *can* be built as desired, and at a cost not exceeding $70,000 per mile, which is a cost of $140,000,000 for 2,000 miles. The interest on that sum, per year, is $8,400,000. That road is a well managed one which, after paying all expenses, saves 45 to 48 per cent of its earnings ; but, in this case, suppose *one-half* of the earnings are saved, and can be counted as *clear profit.* To clear a profit of $8,500,000 with which to pay the interest, the road would have to do a business of twice that amount, or $17,000,000 per year ! Does any reflecting man suppose that a community of 500,000 souls on the Pacific coast can do an *overland* business, (which is, in all cases, less than the *maritime* business of a people having a sea-coast extending and meandering through seventeen degrees of latitude,) *the very cost of transporting which* exceeds $17,000,000 ?

Let us look at this in a practical way. The entire value of the foreign imports of California by both sea and land, during the past year, amounted only to $5,951,379 ; the foreign exports to $8,224,066—total $14,175,445. Of these exports, no less than $1,034,651 consisted of "foreign produce," which was not wanted, and therefore was sent to other countries. These figures were obtained at the Treasury, and may be relied on. Now, if the entire value of the foreign commerce of California is only about $14,000,000, what was the price paid for *carrying* to and from California that $14,000,000 worth of goods? If that commerce had consisted *wholly* of iron, beef, pork, flour, naval stores, &c., the cost of freighting it hither and thither would have been about *one-tenth* of the value of the articles carried—say $1,500,000. If that commerce had consisted wholly of brandy, the cost of carrying it would have been about one-fortieth or one-fiftieth of its value—say $350,000. If that commerce had consisted entirely of cloths, (whether of wool, cotton, or silk,) the freight would have amounted to a very small sum of money.

And here it is well to recall a great fact, viz : that of the commerce

of the United States, whether foreign or domestic, but an insignificant part is conveyed upon railroads. The great body of the trade is done upon the ocean, the lakes, the rivers, the canals, and upon plank and gravel roads. The business of freighting done upon railroads, important as it truly is, may, when contrasted with that done upon the water, be safely pronounced *insignificant*.

It is also safe to say that the freight of the $14,000,000 of California commerce for the year 1855 did not probably exceed one and a half millions of dollars; probably considerably less.

Supposing that the freights earned on domestic goods sent to and from California by shippers from the Atlantic ports of the United States during the year 1855 amounted to three millions of dollars; the aggregate freights earned by shippers of foreign and domestic goods would be four or four and a half millions of dollars—an aggregate by far above the reality.

By adding the fares for all passengers to and from California, by sea and by land, in 1855, the aggregate income from passengers, and from freights, at the high rates assumed, might amount to some five or six millions of dollars.

But a small portion of this trade could be taken away from shippers; and even if it could, it would go but part way towards supporting *one* railroad instead of maintaining *three*, recommended by the committee. But a small portion of the freight of any country that is favored with an extensive sea-coast is conveyed upon roads of any kind, except to and from the seaports. This holds true, not only with New York, but also with the interior States of Ohio, Michigan, Indiana, Kentucky, Illinois, and Missouri; the great mass of the freight of each one of which States is carried to market by water, and not by land conveyances. The Ohio, and the Mississippi, and the Illinois rivers, and the lakes, and their connecting canals, bear upon their bosoms a hundred times more tons of freight than all the railroads in all the States which border upon those waters.

So (only in a greater degree) with the ocean conveyances contrasted with roads. How numerous are the instances where articles are conveyed hundreds of miles along the Atlantic coast in light vessels, and laid down at the seaports, and sold at a less price than the same articles brought in upon roads only some fifteen or twenty miles. Any member of Congress can learn of various instances of this kind by inquiring of business men in this very city. And Congress is not at liberty to be blind to the existence of facts in relation to the relative cost of water and land transportation which bear so directly upon the *feasibility* of those great mountain roads, considered in an economical point of view.

To show that the shipping interest is really and truly able to maintain its business undiminished in the face of any competition which any mountain railroad can possibly start against it, and that railroads cannot take it away from the ship-owners, attention is invited to the various letters appended to this report. Not being personally acquainted with large shipping merchants of intelligence and probity in the northern cities, the Speaker of the House (and this occasion is gladly embraced to make acknowledgments for the cheer-

ful politeness with which the service was rendered) enclosed the inquiries of the undersigned to eminent Boston merchants. Mr. Wm. Sturgis, who, in the language of the Speaker, "is one of the oldest and most intelligent merchants of this country," says, "I am unable to give the relative cost of transportation over the several routes named in the memorandum; but, assuming four cents per ton per mile as the lowest rate, and the shortest route from New York to San Francisco to be 2,500 miles, it would cost one hundred dollars to carry a ton of goods from one of these cities to the other by railroad; a charge quite disproportionate to the average value of goods usually shipped between the two places, and too heavy to be borne by most of them.

"The best answer I can give to the inquiry as to the present and prospective rates of transportation over existing railroads, will be found in a pamphlet recently published by Captain Wm. H. Swift, formerly in the United States service, a copy of which will be sent with this. I entirely concur with him in opinion that these rates must be materially increased to make railroads remunerative; and this remark will apply to those that may hereafter be constructed, as well as to those already in use.

"I doubt if a railroad from the Mississippi to the Pacific would derive much support from the transportation of merchandise. The advocates for building this road profess to believe that a large portion of the productions of India and China would ultimately find their way to the Atlantic States by this route. Such is not my belief. At the present time, first-class ships that will carry 2,000 tons each way may be chartered for a voyage from New York or Boston, thence to Canton or Calcutta and back to the United States, for $50,000 the voyage round; thus bringing the rate of freight to $12 50 per ton, out or home. It will cost nearly or quite as much to bring a ton of merchandise from Canton or Calcutta to San Francisco as to bring it to the Atlantic; and the expense of bringing it from California to New York by railroad would be at least three times as much as the profit expected by the merchant upon the whole voyage, as now carried on."

The foregoing extract throws much most valuable light upon several important points connected with the subject under consideration. The pamphlet of Captain Swift, to which Mr. Sturgis alludes, places the actual cost of carrying freight on the New England roads at two cents and four-tenths of a cent per ton per mile; if the profits are to be as much as the costs, then the railroad charge for carrying freight should be four cents and eight-tenths of a cent per ton per mile. Mr. Sturgis reckoned the freight at four cents a ton per mile, which would be *too low*, even in New England; far less among the Rocky and Snowy mountains, where the expenses would be so much greater. Instead of four and eight-tenths of a cent, call the freight *five* cents per ton per mile. So as to distance. Mr. Sturgis makes it too short; from San Francisco to Fort Smith is 2,025 miles, or from San Francisco to the southwest line of Missouri, near Springfield, is 2,025 miles; and from there to St. Louis, 350 miles; and thence to New York, 1,150 miles: in all, from San Francisco to New York city 3,525 miles, and not 2,500 miles as he estimates. The ex-

treme southern route would be still longer. At five cents per ton per mile, it would cost, to carry a ton of merchandise from San Francisco to New York, on a railroad, no less than $176 25 ; at four cents per ton per mile, it would cost $141 ; at three cents per ton per mile, it would cost $105 75.

When it is considered that merchandise can be conveyed from China, or from the East Indies, to New York or Boston for $12 50 per ton ; and when it is known that "it will cost nearly or quite as much to bring a ton of merchandise from Canton or Calcutta to San Francisco as to bring it to the Atlantic," can any member of this House suppose that merchandise will be sent from China and India to California, to be sent overland to New York at a cost of $176 25 per ton?

As this point is an exceedingly important one, and worthy of the most careful consideration, attention is specially invited to the following extracts from an able letter written by Messrs. Glidden & Williams, at the instance of Messrs. James M. Beebe & Co., and the secretary of the Boston "Board of Trade," Mr. J. W. Bates. After stating that the cost of sending goods from New York *via* isthmus of Panama to San Francisco, by steam propellers, may be estimated at $52 per ton, "and say for dead weight about one-third less, or $35 per ton," Messrs. Glidden & Williams add: "We would remark, however, that there are not many goods that can afford to pay such high rates. We think that while shippers can place their goods in San Francisco from New York and Boston at $12 and $14 per ton, as now, by first-class clipper ships, there will not be enough of the finer goods sent forward to tend to a reduction of present rates to even the prices named above, and that the trade will be carried on principally by sailing vessels around the Horn, the steamers taking goods of high value, and such as may be temporarily in great demand, continuing to get high rates for them."

It is thus seen that sailing vessels are carrying goods from the Atlantic to the Pacific ports at a cost of from $12 to $14 per ton, and that "there are not *many goods* that can *afford* to pay such high rates" as $52 per ton for being conveyed from New York to San Francisco. How, then, can the friends of the plan of building THREE railroads, with numerous branches, *expect to obtain freight at prices more than three times as high?* True, silks, satins, crapes, and cashmeres, a single *half ton* of which would supply so many merchants, and have a value so large, would be carried by that conveyance which is the quickest ; for, at the rate of $12, or even $25 per ton, what would be the cost of carrying *one yard* of silk, or satin, or lace? Not enough to affect its cost, of course ; and hence the greatest speed will be sought for without regard to its cost. But, as Messrs. Glidden & Williams say, *there are not many goods* that can afford to pay even $50 per ton for carriage from one port to another. This fact, taken in connexion with the statement of Mr. Sturgis, that "it will cost nearly or quite as much to bring a ton of merchandise from Canton or Calcutta to San Francisco as to bring it to the Atlantic," and that the "expense of bringing it from California to New York by railroad would be at least *three times as much as the profit* expected by the

merchant upon the whole voyage as now carried on," must satisfy even the most prejudiced that the trade of Asia is *not likely* to be taken from ships, and placed in the cars which traverse the mountains of Utah and the desert plains of New Mexico and Nebraska.

But it may be said that, although "freight" cannot be profitably diverted from ships to a mountain road, upon which, after being carried 2,000 miles, it would still be left 50 or 75 miles west of the western boundaries of Arkansas, Missouri, or Iowa, yet that the TRAVEL over it would be *far* larger than the undersigned has admitted; that the "passengers" traffic would be large enough to make *one* first class military commercial railroad remunerative. Let us test this supposition by comparing it with known facts.

Of course travellers would start from one or the other of the two *ends* of the railroad, as people do not live in any considerable numbers in the deserts and the mountains. The "way" business will be inconsiderable; the "through" business will be almost the *sole* business

The receipts of the great Baltimore and Ohio Railroad (379 miles long) were, last year, $3,711,453 85; of which no less than $3,103,-154 85 were derived from "tonnage," and only $608,299 from "way" and "through" passengers both! At the same rate, the receipts for passengers on the Pacific railroad, 2,000 miles long, would be $3,210,000 per year! This would not keep the machinery and the road-bed *in repair!*

During the last year the New York and Erie Railroad, one of the longest and most important roads in this country, conveyed 980,449 passengers, earning $1,698,670 15. Of the 980,449 passengers, 924,-106 were "way" passengers, earning $1,104,017 48, and but 56,-340 were "through" passengers, earning $594,652 67.

Of "way" passengers, *who compose the bulk on every passenger railroad of importance in the United States*, the Pacific railroad would have *next to none at all*, until after it becomes possible for people to live in the deserts and in the Rocky mountains.

Should a Pacific railroad, beginning at San Francisco and terminating on the western borders of either Arkansas, Missouri, or Iowa, where population is sparse, and so continues quite down to the Mississippi river, 300 miles further east—should such a road, thus unfavorably terminating at the east, have a "through" passenger business as large as the Erie road, which connects the western States directly with New York and Boston, it would amount to but $2,563,000! scarcely *one-fourth* of the money necessary to keep up the road and machinery, supposing the road was built *and made a present of* to those who would undertake to run it and keep it in good repair! The entire "through" passenger business of the New York Central, the New York and Erie, the Pennsylvania, and the Baltimore and Ohio railroads, does not yield money enough to keep in repair and run a Pacific railroad, although those four roads connect 15,000,000 of people with the four greatest commercial cities upon the Atlantic coast!

How can Congress rationally suppose that theory a sound one which necessarily assumes that the passenger traffic between 500,000 men,

women, and children on the Pacific coast, 2,000 miles off, and the border population west of Arkansas, or Missouri, or Iowa, *will be greater* than that carried on over the four great connecting roads between Boston, New York, Philadelphia, Baltimore, and the hundreds of small cities and manufacturing villages on the one hand, and the whole west on the other?

The Boston merchants have shown, as before set forth, that a railroad across the mountains cannot successfully compete in the freighting business with those shipping men who have carried the American flag into every sea. And we have seen that if its through passenger business, mile for mile, were as great as that of the New York and Erie railroad, its earnings would not equal *one-fourth* of its annual expenses.

Take, then, the travel, and what freight can be obtained, and who can say that the earnings of a road from California to the Mississippi would be equal to the sum of $8,400,000 per year? If a road cannot be relied on to earn that vast sum, then its construction ought not to be commenced. At $70,000 per mile, either road would cost a little over one hundred and forty millions of dollars; the annual interest upon which, at six per cent., is $8,400,000. Of the earnings it takes *one-half* to pay the expenses of running the road and keeping it in repair. To realize the $8,400,000 with which to pay the interest upon the cost, the road, therefore, would have to earn double that sum, which is $16,800,000! Now *can any one show that the road can earn the first half of that sum, with which to run it and keep it in repair*, much less the second, $8,400,000, with which to pay the interest on first cost? Can any one point out satisfactorily from what sources even HALF ENOUGH earnings ($4,200,000) can be obtained to keep the road running and in good repair?

But instead of building and equipping one of those roads for the price of a Massachusetts, or New York, or Pennsylvania, or of a Maryland railroad, the cost may be safely calculated to be more than twice as much; if so, the interest would be at least $16,800,000 per year; and to pay that sum would require gross earnings to an amount of not less than thirty-three million six hundred thousand dollars per annum, forever!

Not only so. The committee recommend the House to construct THREE *such roads*, the shortest of which to be not less than 2,032 miles long, and ending with seven roads east of the mountains and three west of it! To properly support that hydra-headed road alone, the united support of the entire industrial interests of the whole British empire would prove utterly inadequate!

The southern road has proportions equally gigantic and pretentious, whilst the hyperborean route, looking into Puget's sound from the head of Lake Superior, is dwarfed into the modest length of 2,025 miles! Had the route from Kansas, in Missouri, across the Arkansas, along the Huerfano, up the acclivities of Mr. Fremont's El Sangre de Christo pass, through the Sierra Blanca, into the long ascending valley leading up to the grand and majestic heights of Colonel Benton's far-famed Coo-cha-to-pe pass in the Rocky mountains; thence down its violent western declivities through narrow gorges, dangerous

defiles, and deep and crooked cañons, into the swift and bounding waters of Grand river; thence scale the steep sides of the Wah-Satch agglomeration of mountains, and descend from their giddy heights to Colonel Benton's beautiful spring O-jo San José; thence descend to the Santa Clara meadows, which are but one mile high above the level of the sea; thence onward through the picturesque country which Colonel Fremont aptly describes as a country "bristling with mountains;" and thence to the Sandy desert, along the "river of sand," through Walker's pass of the Snowy mountains, down said mountains to the San Joachim, and thence along the same to San Francisco; had *this* route, only some 2,080 miles long, been added to the bill reported by the majority, the *completeness of the scheme* would have rendered the labor of preparing this report entirely superfluous. The bill would have been self-expository and self-condemnatory; as it is, however, even without that most extraordinary of all routes ever seriously proposed for a railroad by men "with beards on their faces," examination must show the scheme of the committee to be, *if not a financial absurdity*, at least one of extremely questionable merits.

If *one* railroad is built across those vast desert plains and mountains, it will, in all probability, require to keep it in running order, and to pay only simple interest upon its first cost, annual earnings to an amount not less than $33,600,000! If *two* such railroads shall be built, annual earnings to the amount of $67,200,000 will be required; if *three* roads, then $100,800,000! A sum of money greater, probably, than is yearly earned by all the shipping of all the oceans of the world!

In other words, a railroad is *too costly a thing* to be employed *everywhere*, for *every purpose;* because it is a great and self-sustaining commercial convenience in a densely populated country of divers industrial pursuits, it by no means is to be *inferred* that goods sense calls for its introduction into Iceland, Africa, or Patagonia. Nor is the success of railroads in Massachusetts, Pennsylvania, and Georgia, to be taken and held as proof that it is well to attempt to construct one 2,000 miles long over numerous ranges of lofty and uninhabited mountains, merely to transact the business of half a million of people in California; especially when that people front more than 1,500 miles upon the most tranquil ocean upon the globe.

The undersigned, for the foregoing and many other reasons which time does not allow to be adequately set forth upon this occasion, is of the opinion that, considered in reference to its ability to maintain itself from its own earnings, a railroad from the Mississippi river to the Pacific ocean *is not feasible* upon any route yet explored and reported upon to Congress. If not one, of course not several.

Third. But supposing the road were *feasible*, considered in a money point of view, is it politic (if it has the legal power) for the general government to *forestall* individual enterprise, and proceed to construct a railroad for the accommodation of trade and travel? Clearly not. The nations of Europe, as nations, build canals, turnpikes, colleges, churches, &c. The policy of the United States, on the other hand, has hitherto been to leave these things to be done by the several

States, and by the people. Of the upwards of 24,000 miles of railroad now in actual operation in the United States, not a mile has been built by the United States government. And yet the expansion of the railroad system, without being stimulated by national competition into greater activity, has been quite as rapid as the welfare of other material interests would justify—quite. What interest has represented to Congress that *too small* an amount of capital has been invested in railroads and canals, and requesting such legislation as will cause capital to be more rapidly invested in new railroads? True, Congress has occasionally, and, at the present session, *frequently*, aided the construction of railroads *through government lands*, taking care to double the price of the alternate reserved sections. But this system is of recent date, and by no means meets with universal approval; the solidity of the objections urged against it is already becoming so manifest to all, that it is exceedingly doubtful whether it will be maintained beyond the existence of the present Congress. The small stimulus afforded to the business of railroad building by this aid given by Congress to roads built or building through its unsettled lands, is not believed to have had, so far, a very material influence upon the general movements of the capitalists of the country; except so far as relates to Illinois, Missouri, and Alabama, its influence upon railroad building has, probably, had no perceptible influence.

Shall Congress go a step further? Shall it step forward, and, by the use of its lands, or of its money, build one, two, or three continental railways, each of them not less than 2,000 miles long, and each of them costing not less than double the cost of roads in the settled portions of the country—say $140,000 per mile, which is $280,000,000 for 2,000 miles of road?

At the time this country shook off the dominion of Great Britain, wealth was very equally divided. Rarely could an individual be found whose property was worth one hundred thousand dollars. Paupers were almost unknown. The country had but little wealth, and but little pauperism. In 1800, the country was still poor, and the government was in debt. Individuals lacked the capital necessary to open mines, dig canals, construct roads, or to clear out rivers and harbors; and, hence, the development of these sources, and of these means with which to acquire wealth, was necessarily *slow*, as compared with the rapid developments of the present. To quicken movements, States commenced digging canals by making use of their several credits; associated companies built turnpikes, and founded banks with small capitals and large issues; cities built wharves and improved harbors by using their municipal credit; and, in obedience to the popular impulse, the general government itself used its credit to found a bank, with the notes of which to swell the amount of the currency.

The results were productive of great good and of much evil. An immense interior canal navigation, without a rival in the world, was created; many thousands of miles of turnpike-roads were built; mines were opened, factories built, ships and steamboats launched, and fortunes created with a rapidity never before witnessed. The railroad system followed with like rapidity, distancing all the world beside.

On the first day of January, 1856, the railroads of the United States numbered more miles of road in actual operation than those of all other nations added together.

But experience taught that managing banks and building national roads was a business for which the general government was peculiarly unfitted. The experience of the several States teaches the same lesson; in proof of which, it is only necessary to point to the financial difficulties occasioned by attempting to execute works of internal improvement. Look, for example, at the experience of Pennsylvania, Maryland, Ohio, Michigan, Indiana, Illinois, and Mississippi. Even New York, with its supposed success in its schemes, was compelled to resort to direct taxation to restore its severely wounded credit.

Most of the railroads and turnpikes, most of the academies, colleges, and universities, all of the churches, and most of the libraries, all of the ships, steamboats, shops, founderies and factories, and the opening up of farms, plantations, and mines, may be pronounced the results of individual, and not of government enterprise.

There is between the condition of things existing in 1800 and in 1856 very little similitude. *Then*, capital was scarce; the mines unopened; manufactures unestablished; steamboats, railroads, telegraphs, and the cotton-gin uninvented; and even country turnpikes, as well as canals, remaining unbuilt. *Now*, no nation has a larger capital, or a greater volume of a hand-to-hand currency, composed of coin and bank paper, or more valuable opened mines, or more extensive manufactures, or larger agricultural products, nor so many ships, steamboats, miles of canal, railroad, plank road, turnpike-road, or of telegraph lines, as the United States. Wherever it can be shown that by building a new railroad, a new foundry, a new factory, or a new ship, a handsome profit can be made, there will capitalists speedily make their appearance. So it is in mining, so in farming, and planting.

When the country was truly poor, there was some excuse for desiring government to come to the aid of individuals seeking to build roads to their mines, to their shops, or to their farms. But now, when the country is rich, and when capital is seeking investment in any and all enterprises that are both safe and profitable, it is at war with sound policy for those charged with the administration of the government to seek, or to allow themselves to be persuaded, to enlarge its patronage and increase its cumbrousness by entering upon the business of railroad building. For if government once enters upon the business, though only in the humble capacity of *assistant*, the speculators and agents who may be interested will soon contrive to convert it into the *principal*.

If the contemplated railroads will be as profitable as claimed, then their construction ought to be left to those gentlemen whose regular business it is. They ought not to be deprived of it. Government ought not to *interfere* with the business of its citizens; it ought not to *compete* with them in the transportation of trade and travel upon the land any more than upon water. If Congress builds a line of road *as a matter of accommodation*, and not for *competition*, then it should do the same thing *wherever desired*. To do less, is partiality. And

an honest government is necessarily impartial; it ceases to be honest the moment it loses its impartiality.

As capital is abundant and enterprise superabundant, individuals will build the roads west *from* the Mississippi, as they have from the east *to* the Mississippi, *if those roads may be fairly considered paying roads;* and as the majority of the committee are of opinion that they will be, it is respectfully submitted whether sound policy does not require Congress to leave the work, and the profits thereof, to those enterprising persons who so commendably seek to enjoy it!

If, however, the work will *not* pay, but will entail ever-continuing expense, why should Congress build a road that prudent capitalists will not touch? Why should government be less wise and less prudent than individuals—especially as it would cost government far more to build, and far more to maintain, a railroad than it would experienced and prudent individuals? Where prudent and experienced men hesitate, the government may well pause before committing itself to an expenditure of hundreds of millions of dollars.

And, besides, it is considered entirely inexpedient and impolitic to enter upon the business of constructing railroads for the accommodation of trade and travel. If this policy is entered upon, why shall not the United States next proceed to build a direct road from Washington to New York, and thence to Portland? Why shall it not seek to avoid the errors of location committed by the New York Central railroad, and build a road from New York to Buffalo on a more direct and shorter line? Why not build a road from New York to Erie, in Pennsylvania, on a line that will more perfectly accommodate trade and travel than does the New York and Erie railroad? If the government is induced to enter upon a competition with capitalists to supply railroad accommodations, *when* and *where* is it to stop? If a crevasse is once opened, who can foretell the extent of the ravages of the flood? Who can say where the new channel will run? What interest would be safe from congressional incursion when all barriers *but discretion* are removed? When lobby agents for competing railroads shall be as numerous as steamship agents, what railroad stockholder shall be able to say *his* road will not next be subjected to *government competition?* And when five or ten years hence the Territories shall be States, who can predict that the subject of government's *duty* to furnish the people railroads to put down "corporate monopolies" will not succeed the present Territorial agitations?

The undersigned is immovably opposed to the recognition of the doctrine that it is the duty of Congress to build railroads for the accommodation of trade and travel. The object of government is to protect the property and business of its citizens, and not to lessen or to injure the one or the other by entering into competition with them, backed by its enormous treasury and credit.

But we pass from this important point to a consideration of another plausibility, which has been much relied on by many latitudinarian expounders of the power and objects of the general government.

Fourth. If it is impolitic and unseemly for the government to engage in a competition with its own citizens, can it not, with propriety,

construct either a military or a postal railroad for the use *both* of the United States and of traders and travellers? No; for if government builds a military railroad, it could not legally be wrested from the object of its construction, and converted into a commercial road. As well might the Secretary of the Navy rent an office in New York or Boston, order the United States ships-of-war into the harbor, and commence a freighting business between the United States and England, in competition with the shipping merchants! As well might the officers and soldiers of the army be hired out to farmers, or set to work in factories! As well might forts and arsenals be converted into flour mills, or blacksmith's shops, or town halls, for the convenience and pleasure of the people living near them! Government was instituted for the protection of its citizens against foreign invasion and domestic insurrection, and not to enter into the freighting business, or into railroad building, for the benefit of the trading and travelling classes.

It can lawfully build a fort; but, under the pretence of its being a fort, it cannot build a *flour-mill*. So also can it build a military road, *if absolutely necessary for military purposes;* but, under the pretence of building a military road, it cannot proceed to build a commercial road, open ticket offices, build stores, depots, and sheds, and commence a freighting business in competition with its citizens. Such power was never given, for the reason, among others, that whatever business government entered upon, having power to protect itself, it would crush out all competition. And, besides, the powers granted by the constitution are expressed in clear and direct terms. The whole spirit of the instrument is at war with evasions. That spirit, at times like the present, ought to be respected.

As to the building of postal roads, nothing need be said about the danger of their perversion to other purposes, for no authority appears to have been given Congress to build one.

But aside from the impropriety of perverting a military road to uses other than those for which it was, at least, *ostensibly* built, there are other reasons why a commercial road, under the pretence of its being a military one, should not be built by the United States.

In 1812, the cost of transporting troops, munitions of war, &c., through the interior of New York, Ohio, and Michigan, to the Canada frontier, was truly enormous. The extra cost of transportation would have built good military roads; but war not having been anticipated, they were not built, and the cost of transportation had to be encountered.

After the war was closed, burdened with debt, distressed by a disordered currency, and unwilling to foster a military spirit at the expense of the arts of peace, the wise men at the head of our government resolved to pretermit the subject of building expensive military roads and fortifications, not doubting but that with the growth of the country good roads would keep pace. It was deemed best to depend in time of war upon the roads which the people used in time of peace, instead of rolling up an onerous public debt.

The wisdom of this policy has been nobly vindicated by results. From Maine to Wisconsin, along the whole Canadian frontier,

good country roads leading thereto everywhere exist. In addition, fine canals have been dug and lined with thousands of canal-boats, and extensive railroads, in most advantageous directions, have been built and efficiently equipped with suitable rolling stock. Railroads have also been built, or are now building, not only along the whole Atlantic and Gulf frontiers, but railroads connecting with these at innumerable points, from the remotest interior States, have also been built, have been well stocked, and are well managed. All these have been built by States and by individuals, without taxing the federal treasury. These canals and railroads are well and profitably managed; they serve in time of peace as distributors of the goods from which the government derives its income, and in war will prove the most efficient instruments of defence known among military men. A greater number of men can be conveyed by them in twenty-four hours to any considerable city between New Orleans and Portland, than any fleet of any one nation can land at one time at the one point; so that, at the moment of landing, *an invading foe would stand in the presence of a superior force.*

Had the government involved the nation in a debt of $800,000,000, a better system of military roads could not have been put in operation.

Why, then, should the government of a people so enterprising and so energetic change its policy, and, at this late day, distrusting the future, commence the construction of military railroads?

Looked at from another point, reasons against entering upon a new line of policy present themselves. Hitherto it has been an object with the wisest of our statesmen not to unnecessarily enlarge the operations or the patronage of the general government, but rather to keep both within as narrow limits as duty and usefulness will permit.

Placing out of view the fact that a commercial railroad, *in every day use*, will be kept in a higher state of efficiency and at far more economical rates than a military one, and is, therefore, *better fitted* for military emergencies than would be an exclusive and but seldom used military railroad; putting all this out of view, the enormous amount of patronage (of a character that could be but indifferently well controlled) which would be devolved upon the general government, is a most serious objection to constructing a military railroad across the mountains to the Pacific ocean. To be able to appreciate this, at least to some feeble extent, it may be well to examine the patronage, in part, (for time will not allow of a full examination,) which a military railroad 2,000 miles long would confer on the executive department of the government.

To do the business on the great road from Boston to Albany, 200 miles, requires the labor of 1,961 men. At the same rate, a Pacific railroad, 2,000 miles long, would require 19,610 men!

The Baltimore and Ohio railroad, which is 379 miles long, employed, last year, 4,259 men. At the same rate, the Pacific railroad would employ 22,472!

The Hudson River railroad, which is 144 miles long, and very level, employs 1,238 men. At the same rate, the Pacific railroad would employ 17,193 men.

In other words, the Baltimore and Ohio railroad employs 11 men per mile; the Hudson River road, 8 men per mile; the Boston and Worcester road, 8 men per mile; the Western railroad, (from Worcester to Albany,) 9 men per mile. On 8,116 miles of English railroads, 12½ men are employed per mile; on the New York Central road, 10 men per mile; and on the Pennsylvania railroad, 16½ men per mile are employed. At the rate employed on the English railroads, the Pacific railroad, if just 2,000 miles long, would employ exactly 25,000 men! At the rate of the Pennsylvania railroad, 33,000 men! The three Pacific roads, 99,000 men!

And can we reasonably suppose that a road through such a region of difficulties and dangers would require *less* labor than the beforenamed roads? By one single enactment—establishing one military railroad—the patronage of the government would be increased from 25,000 to 35,000 men! If the creation of one or two places justly causes reflection and debate, how should a measure creating 35,000, or rather 100,000 places, be received? That this is not *all*, will be shown next.

To exhibit, *in part*, the value of the patronage which a military railroad, doing commercial business, would bestow, the following table has been prepared. The table will show certain expenses necessarily encountered by certain companies:

	New York Central.	New York and Erie.	Pennsylv'a R. R. Co.	Baltimore & Ohio.	Boston and Worcester.	Total.
Number of miles of road of main road	298	460	248	379	44	1,430
Number of locomotive engines	188	203	115	208	29	743
Number of passenger cars	2,425 (all kinds.)	125	94	73	107	*399
Number of baggage cars	.....	43	24	14	18	*99
Number of freight cars	.....	2,770	1,485	3,338	746	*8,339
Number of cars	2,425	2,938	1,603	3,425	781	11,172
Cost of fuel, per year, for engines	$589,830 61	$481,270 91	$138,202 43	$726,204 96	$151,475 98	$2,086,984 89
Yearly cost of oil, tallow, &c, for engines and cars	126,007 15	98,808 38	31,431 50	66,443 45	10,341 33	333,031 81
Cost of waste, &c., for cleaning	.....	.....	4,244 24	9,798 61	986 06	15 028 91
Loss and damage of goods and baggage	35,083 84	21,631 40	.....	.....	.....	†56,715 24
Repairs of fences and gates	8,340 56	9,132 50	.....	.....	.....	†17,479 06
Damages for injuries to persons	43,839 43	3,015 00	.....	1,670 70	10,556 54	*59,081 67
Damages to property, including damages by fire, and cattle killed on the railroad	12,280 94	96,813 96	.....	30,734 34	.....	‡139,829 24
Repairs of roadbed and railway	657,290 20	530,400 88	181,717 01	476,547 58	104,737 24	1,940,692 91
For taxes and insurance	111,529 47	54,583 05	141,213 35	.....	9,857 01	317,182 88
For repairs of station buildings, fixtures, and furniture	56,325 71	25,031 05	.....	49,000 00	19,398 05	†149,754 81
Amount of materials kept on hand	664,374 06	504,655 06	252,506 11	293,733 63	203,396 18	1,918,665 04
Cost of repairs of machinery	778,360 79	386,894 90	620,578 04	503,884 68	96,673 33	2,386,391 74

* For four roads. † For two roads. ‡ For three roads.

The above table takes no notice of the salaries of the officers and pay of the men; and yet the five items—cost of fuel, cost of oil for wheels and waste for cleaning, &c., cost of insurance and taxes, cost of keeping the machinery in repair, and keeping the road-bed and rail-

way in repair—for those five railroads, having a total length of 1,430 miles, amount, per year, to no less than $7,079,313 14!

If, after leaving out the entire cost of management, the mere fuel, oil, repairing the road, repairing the machinery, and paying insurance and taxes, alone cost, annually, over seven millions of dollars to keep up fourteen hundred and thirty miles of road located in the best part of the United States, what would it cost to support more than 2,000 miles of railroad amid deserts and mountains? If it requires 743 locomotive engines on 1,430 miles of railroad in the Atlantic States, and $1,918,665 04 worth of materials kept constantly on hand, in readiness for repairs of machinery and road-way, how many engines, and what amount of materials, would be required on a road running over mountains upwards of 3,000 feet high, for a distance of 1,432 miles, as does the South Pass route? An examination of the letters appended hereto will show the lessened power of engines when required to move a train up a steep grade, or against sharp curves. High grades and sharp curves are the attendant evils of mountain routes, and not only call for a largely increased number of engines, requiring more men, fuel, oil, repairs, &c., but also more *speedily use up* both the machinery and the road-way. Even on the New England railroads, Mr. Appleton says, the rails last but five or ten years, and locomotives last but some ten to fifteen years. So, also, in regard to cars. On the five roads, no less than 11,172 cars are in use. What, then, must be the number which would be required on a continental railway, equipped to do a continental business corresponding with the mammoth capital invested?

These few items will give a faint idea of the *immense patronage* that the building and management of a railroad constructed *nominally* for MILITARY, but used for COMMERCIAL purposes, would confer upon the government. It would create a debt of mountain magnitude; and yet it would not in all probability earn enough to repair its machinery and road-way, and pay for the fuel to drive and the oil to lubricate the wheels of its cars, even if its thirty-odd thousand employees would perform the necessary labor *gratis*.

Why, then, should this government, even if it has the constitutional authority to do so, attempt to build a railroad so expensive and wholly unproductive—especially as the enterprise of the American people has furnished to the government, without charge, the best of railways for military, postal, and commercial purposes; and that, too, without imposing upon the nation the necessity of a patronage at once widespread, measurably irresponsible, and of most demoralizing political tendencies?

Fifth. Has the Congress of the United States constitutional authority conferred upon it authorizing it to provide for building either railroads or canals for the uses and conveniences of the people?

It has not. Wise men like Mr. Jefferson, Mr. Madison, Mr. Macon, Mr. Polk, Judge Woodbury, and many others of high authority upon questions of constitutional law, believed that the constitution conferred no such authority upon Congress. Referring, for the reasons upon which he bases his opinion, to the numerous able expositions of this subject,

(without presuming to attempt to add new ideas upon them,) the undersigned satisfies himself with an expression of the opinion that Congress has no authority, express or implied, to build a railroad either in the States or in the Territories. But for the great length to which this report has already been extended, a summary of the opinions of great constitutional expounders upon this point would have been added hereto. It is, perhaps, scarcely necessary.

Occasion is taken to express, in terms of thankfulness, the many favors received from leading railroad and shipping men in different parts of the United States. In nearly every case where information has been sought, it has been cheerfully and promptly afforded, though sometimes occasioning much trouble and loss of valuable time. Few valuable avenues of information have been left neglected, nor has any been closed; want of skill and experience has alone prevented a more perfect use of the valuable materials placed at the disposition of the undersigned: if any errors of fact, or of inference, have escaped him, it is justly attributable to the same cause. However imperfect the result may be found, the *aim* has been to reach just and reliable conclusions.

In conclusion, the undersigned believes that Congress ought not to attempt to build, in whole or in part, alone or in partnership, as a principal or as an aider, with money or with land, one or more railroads from the Mississippi river to San Francisco, on the Pacific ocean.

All of which is most respectfully submitted.

Z. KIDWELL.

No. 1.

Tabular statement containing answers to questions proposed by the select committee on Pacific railroads, House of Representatives, in regard to the several railroad routes from the Mississippi river to the Pacific ocean.

Route.	Length in miles.	Number of miles at an elevation above the sea greater than—										No. of miles at an elevation less than 1,000 ft.	Rocky mountain range.		No. of miles at an elevation above 3,000 ft. on the line—			Estimated cost of construction and equipment.
		10,000 feet.	9,000 feet.	8,000 feet.	7,000 feet.	6,000 feet.	5,000 feet.	4,000 feet.	3,000 feet.	2,000 feet.	1,000 feet.		Distance from eastern terminus to—	Elevation of base of—	East of summit of Rocky Mt. range.	Between sum'ts of Rocky mountain range and Sierra Nevada.	West of summit of Sierra Nevada.	
Near the 47th and 49th parallels (*a*)—																		
From St. Paul (*b*) to Seattle.....	2,025	0	0	0	0	0	28	125	255	975	1,555	470	(*l*)1,118	4,091	123	132	0	$140,871,000
From St. Paul to Vancouver (*c*)....	1,864	0	0	0	0	0	28	125	255	975	1,555	309	(*l*)1,118	4,091	123	132	0	130,781,000
Near 41st and 42d parallels, via South Pass (*d*)—																		
From Council Bluffs(*e*) to Benicia(*f*)	2,032	0	0	16	119	391	693	1,278	1,432	1,579	1,818	214	(*m*) 630	4,470	646	705	81	116,095,009
Near 38th and 30th parallels, via Coochetopa and Taheechaypah Passes—																		
From Westport (*g*) to San Francisco	2,080	0	20	100	255	315	485	951	1,285	1,464	1,740	340	(*n*) 604	4,500	340	928	17	.....
Near 38th and 39th parallels, via Coochetopa and Madelin Passes—																		
From Westport to San Francisco...	2,290	0	20	100	255	365	649	1,374	1,507	1,707	2,015	275	(*n*) 604	4,500	340	1,086	81	.....
Near 35th parallel—																		
From Ft. Smith (*h*) to San Francisco.	2,025	0	0	0	25	317	651	745	935	1,153	1,492	533	(*o*) 700	4,700	415	485	17	94,720,090
Near 32d parallel—																		
From Fulton (*k*) to San Francisco..	2,075	0	0	0	0	0	28	520	620	747	1,118	957	(*p*) 653	4,172	327	293	0	87,990,000

(*a*) The results of the survey connecting these routes with San Francisco are not yet reported.
(*b*) 828 feet above sea.
(*c*) On Columbia river, 75 miles from its mouth and 157 feet above sea.
(*d*) Should the route follow Bridger's Pass it would be 50 miles shorter, and would present, without doubt, a much better profile.
(*e*) On the Missouri river, 279 miles in a direct line from Mississippi river, and 1,327 above feet the sea.
(*f*) About 30 miles from San Francisco, on the straits of Carquines.
(*g*) 187 miles from Mississippi river, and 991 feet above sea. The mouth of Kansas river (four miles N.N.W.) is about 900 feet above sea.
(*h*) 231 miles from Mississippi river and 470 feet above sea.
(*k*) 150 miles from Mississippi river and 415 feet above sea.
(*l*) At crossing of Dearborn river.
(*m*) At Fort Laramie.
(*n*) At point where route leaves Apishpa river.
(*o*) Near head of Pajarito creek.
(*p*) At head of Delaware creek.

NOTE.—The cost of equipment, included in the estimates, has been assumed for all of the routes, to be $1,200 per mile, with an addition of 50 per cent. for cost of freight, &c. The equipment is estimated for 200 passengers daily, each way, and a light freight business. The costs of locomotives, cars, &c., at the places where they are manufactured, are as follows:
Locomotive and tender, 1st class, $10,000; eight-wheel tank, for 3,000 gallons water, $650; six-wheel tank, for 2,500 gallons water, $550; freight car, of eight to ten tons' capacity, $650; baggage car, $1,200; passenger car, for 50 passengers, $2,000; passenger car, for 75 passengers, $2,500.

No. 2.—*Table showing the lengths, sums of ascents and descents, equated lengths, cost, &c., of the several routes explored for a railway from the Mississippi river to the Pacific ocean.*

	Distance in straight line.	Distance by proposed railroad route.	Sum of ascents and descents.	Length of level route of equal working expense.	Comparative cost of different routes.	No. of miles of route thro' arable land.	Sterile region.		No. of miles at an elevation above 0 and less than 1,000 feet.	No. of miles at an elevation greater than 1,000 and less than 2,000 feet.	2,000 and 3,000.	3,000 and 4,000.	4,000 and 5,000.	5,000 and 6,000.	6,000 and 7,000.	7,000 and 8,000.	8,000 and 9,000.	9,000 and 10,000.	Summit of the highest pass on the route.
							No. of miles of route thro' lands generally uncultivable, arable soil being found in small areas.	No. of square miles of sums of areas of largest bodies of arable land in uncultivable region.											
	Miles.	*Miles.*	*Miles.*	*Miles.*															*Feet.*
Route near 47th and 49th parallels, from St. Paul to Vancouver.*	1,445	1,864	18,100	2,207	†130,781,000	374	1,490	1,000	309	580	720	130	97	28	0	0	0	0	6,044
Extension thence to Seattle	.....	161	1,000	180	† 10,090,000	161	0	.....	161	0	0	0	0	0	0	0	0	0	.....
Route near the 41st and 42d parallels, via South Pass, from Council Bluffs to Benicia.‡	1,410	2,032	29,120	2,583	116,095,000	632	1,400	§1,100	214	239	147	154	585	302	272	103	16	0	8,373
Route near the 38th and 39th parallels, from Westport to San Francisco, by the Coochetopa and Taheechaypah Passes.‖	1,740	2,080	49,986	3,026	Cost so great that the road is impracticable.	620	1,460	§1,100	340	276	165	348	466	170	60	155	80	20	10,032
Route from Westport to San Francisco, by the Coochetopa and Madelin Passes.‖	1,740	2,290	56,514	3,360	.....do.....	670	1,620	§1,100	275	308	190	143	725	284	110	155	80	20	10,032
Route near the 35th parallel, from Ft. Smith to San Pedro.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	.....
Route near the 35th parallel, from Ft. Smith to San Francisco.	1,550	2,025	49,954	2,969	94,720,000	1,002	1,023	2,300	533	339	218	190	94	334	292	25	0	0	7,582
Route near the 32d parallel, from Fulton to Los Angeles.	1,400	1,597	29,784	2,161	68,970,000	618	979	2,300	489	361	127	100	492	28	0	0	0	0	5,717
Extension to San Francisco.....	350	478	9,617	660	19,020,000	478	0	.....	468	10	0	0	0	0	0	0	0	0	1,503

* Tunnel at an elevation of 5,219 feet.

† These are the estimates of the office—those of Governor Stevens having been brought to the same standard of increased cost as the other routes, and his equipment reduced to that of the other routes. His estimates were $110,091,000 and $7,030,000.

‡ Supposing the route to be a straight line, with uniform descent from the Unkukooap mountains (near Sevier river) to the entrance of the Taheechaypah Pass, the most favorable supposition.

§ These sums do not include the areas of the cultivable soil as far west as the Cascade and Sierra Nevada mountains. The sum of the minor undulations (not included in the sum of ascents and descents here given) will probably be greater for the route of the 47th parallel than for the other routes; that for the route near the 32d parallel will probably be the least of all. With the amount of work estimated for the roads in this report, the equated lengths corresponding to the sum of ascents and descents have but little practical value. With a full equipment and heavy freight business, the sum of ascents and descents becomes important. A comparison of the degree of curvature of the routes cannot be made.

‖ Tunnel at elevation of 9,540 feet.

No. 3.

BOSTON, *March* 31, 1856.

MY DEAR SIR: Your favor, enclosing a memorandum from Mr. Kidwell, (both without date,) is received, but circumstances have prevented me from giving an earlier reply. The memorandum asks information relative to the cost of transporting freight upon railroads, particularly upon certain existing and contemplated lines therein named. It is well known to those familiar with these matters that there is great difference in the cost of transportation upon different roads, caused by the location and characteristics of such roads, and other circumstances, which must be known, or assumed as the basis of calculation, for even an approximate estimate of such cost. The grade of the road—a very important item; the facility and expense of procuring fuel and water; full loads each way, to save loss by drawing empty cars, &c., materially affect the cost of transportation. For instance, the Reading railroad—over which a vast quantity of coal is annually carried—is on a level or descending grade nearly the whole distance from Pottsville to Philadelphia; there is at all times a full supply of freight, so that the quantity by each train can be adapted to the motive power; fuel is obtained at the mines at a cheap rate; and every circumstance is favorable for transporting at low cost excepting the fact that a portion of the cars must be returned to the mines empty. Over this road coal is carried at something less than two cents per ton per mile, while four cents per mile for the miscellaneous freight usually carried over our New England roads proves to be unremunerative to most of them.

I am unable to give the relative cost of transportation over the several routes named in the memorandum; but, assuming four cents per ton per mile as the lowest rate, and the shortest route from New York to San Francisco to be 2,500 miles, it would cost one hundred dollars to carry a ton of goods from one of these cities to the other by railroad, a charge quite disproportionate to the average value of goods usually shipped between the two places, and too heavy to be borne by most of them. The best answer I can give to the inquiry as to the present and prospective rates of transportation over existing railroads will be found in a pamphlet recently published by Captain William H. Swift, formerly in the United States service, a copy of which will be sent with this. I entirely concur with him in opinion, that these rates must be materially increased to make railroads remunerative, and this remark will apply to those that may hereafter be constructed as well as to those already in use. I doubt if a railroad from the Mississippi to the Pacific would derive much support from the transportation of merchandise. The advocates for building this road profess to believe that a large portion of the productions of India and China would ultimately find their way to the Atlantic States by this route. Such is not my belief. At the present time, first-class ships, that will carry 2,000 tons each, may be chartered for a voyage from New York or Boston thence to Canton or Calcutta, and back to the United States, for $50,000 the voyage round, thus bringing the rate of freight to

$12 50 per ton out or home. It will cost nearly or quite as much to bring a ton of merchandise from Canton or Calcutta to San Francisco as to bring it to the Atlantic States, and the expense of bringing it from California to New York by railroad would be at least three times as much as the profit expected by the merchant upon the whole voyage as now carried on.

Respectfully, your obedient servant,

WILLIAM STURGIS.

Hon. N. P. BANKS, Jr.,
Washington, D. C.

No. 4.

THURSDAY EVENING, *April 3.*

MY DEAR SIR: Mr. Sturgis is one of the oldest and most intelligent merchants of this country. He was early connected with the commerce of the Pacific.

Truly yours,

N. P. BANKS, JR.

No. 5.

Memorandum.

I desire to learn from one of the ablest shipping merchants of Boston, what would be the ordinary expenses, per ton, of shipping goods in sailing-vessels, or in propellers, from Boston, by the way of the Isthmus of Panama, to San Francisco? In making his calculations, I wish him *to assume* that good wharves, piers, docks, and storehouses exist at both Panama and Aspinwall; and that the railroad across the Isthmus has a double track and abundance of rolling stock.

The answer is desired for the purpose of publishing it with a report upon the subject of constructing a railroad to the Pacific, and hence as near an approximation to the truth as possible from such imperfect data will much oblige.

Truly,

Z. KIDWELL.

Hon. Speaker BANKS,
House of Representatives.

BOSTON, *March* 29, 1856.

SIR: The inquiries of the Hon. Mr. Kidwell, which reached us under cover of your favor of 7th instant, have been submitted to one of our

most intelligent shipping houses, largely engaged in the Pacific trade, and herewith we beg to give their reply.

Very truly, your obedient servants,

J. M. BEEBE, RICHARDSON & CO.

Hon. N. P. BANKS, Jr.,
Speaker of House of Representatives, Washington, D. C.

OFFICE OF THE BOARD OF TRADE,
Boston, March 29, 1856.

GENTLEMEN: The letter of Mr. Banks, and the memorandum of Mr. Kidwell concerning the cost of transporting merchandise from Boston to San Francisco, I handed to Messrs. Glidden & Williams, who are largely engaged in the shipping business with that place.

Enclosed I have the honor of transmitting to you their reply, and to remain, very respectfully, your obedient servant,

J. C. BATES,
Secretary.

Messrs. JAMES M. BEEBE & Co.,
Boston.

BOSTON, *March* 28, 1856.

DEAR SIR: In reply to Hon. Mr. Kidwell's inquiries, through Mr. Banks, we beg to say, that an answer will have to be based only on estimate, as there are no vessels in the trade from here, via the Isthmus of Panama, to San Francisco.

The rate now from New York by steamboats, on each side, is $2 50 per foot, or $100 per ton for measurement goods. We estimate that a fair price would be, by propellers—

Hence to Aspinwall	40	cents per foot.
Railroad—Aspinwall to Panama	30	"
Panama to San Francisco	60	"
	$1 30	"

or $52 per ton; and say for dead weight about one-third less—$35 per ton.

This is on the supposition that there should be regular lines of propellers connecting promptly on each side, with a fair amount of business to sustain them.

For sailing-vessels the rates would be one-half that named for propellers; say—

To Aspinwall	20	cents per foot.
Railroad to Panama	30	"
Panama to San Francisco	30	"
	80	"

or $32 per ton; for dead weight about one-third less—$22 per ton.

We would remark, however, that there are not many goods that can afford to pay such high rates. We think that while shippers can place their goods in San Francisco from New York and Boston, at $12 to $14 per ton, as now, by first class clipper ships, there will not be enough of the finer goods sent forward to lead to a reduction of present rates to even the prices named above, and that the trade will be carried on principally by sailing-vessels around the Horn, the steamers taking goods of high value, and such as may be temporarily in great demand continuing to get high rates for them.

Yours very truly,

GLIDDEN & WILLIAMS.

J. C. BATES, Esq.,
Secretary Board of Trade.

No. 6.

COURT STREET, BOSTON, MASS.,
March 18, 1856.

Hon. N. P. BANKS: Your favor, enclosing the queries of Mr. Kidwell, is before me. It finds me very busy. The questions cover a wide surface, and some of them would require much thought and careful estimates for a very exact reply; but I will endeavor, to the best of my ability, to respond to most of the inquiries.

It is difficult to measure the capacity of a railroad without defining the *gradients;* for the same engine which draws 700 tons on a level, will take less than 70 over a gradient of eighty feet to the mile. It will also draw 1,000 passengers on a level line with the same facility it can take 150 on the 80-feet gradient.

Assuming a line 100 miles long, with no gradient exceeding ten feet to the mile, and an inexhaustible supply of business at each extremity, I entertain no doubt that a single track might transport annually a *million* of tons and a *million* of passengers.

In practice, however, these advantages are not found. Few lines have less than thirty-feet gradients, the trains are rarely filled, the business fluctuates the season, is very irregular, and under the most favorable circumstances, and under the best management, I think a single track may have an extreme capacity to transport yearly 500,000 passengers and 500,000 tons of freight. The highest limit thus far attained, in my experience, is not, however, more than two-thirds of that amount. By doubling the tracks the capacity is increased at least seven-fold; and I know of one line, the Reading railroad, now transporting annually about two and a half million tons of freight, mostly in one direction.

The average cost of transportation here has increased, in the last eight years, more than 40 per cent.; it is, however, now falling. The rise has been caused by the advance of materials, labor, and fuel, particularly the last, which is becoming exhausted in many districts of our State. A part of the rise is due to repairs deferred from previous years, and I consider the permanent rise to be not far from 25 per cent.

Assuming a railroad built from New York to San Francisco costing $40,000 a mile for a single track, and transporting but 30,000 passengers, or 50—viz: one car load—daily in each direction, I should, of course, send but one light engine in each direction every week-day, and having no competition, except by sea and the Isthmus, would charge at least 5 cents per mile. I should estimate the cost of transportation at one-half the charge, and should thus net from passengers $2\frac{1}{2}$ cents per mile, $2 50 per mile daily, and $780 yearly. I should charge for mails $500 per mile more, making net $1,280, or $3\frac{1}{5}$ per cent. on my capital. On gold by the same train, say forty millions of dollars, I should charge at least two per cent., or $800,000; this would yield me $260 per mile more, or $\frac{65}{100}$ of one per cent. I should thus have $3\frac{85}{100}$ per cent. on my capital. I should calculate by my express freight on the same train to make $\frac{20}{100}$ of one per cent., thus earning my four per cent. by one passenger train.

As a line to the Pacific would probably follow the emigrant route by Fort Laramie, I should expect from New York to Fort Laramie, or two-thirds of the way, an average gradient less than thirty feet to the mile; and with plenty of through freight for one or more trains daily, each way, and but one loading and unloading, I think the cost would fall below one cent per ton a mile; for the remaining third of the distance I should expect to double the cost, and thus make the average cost less than $1\frac{1}{3}$ cents per ton a mile.

I think the charge on through freight should be at least $2\frac{1}{4}$ cents per ton a mile.

In thus responding to these inquiries, however, I do not wish to express, even by implication, the opinion that the through travel, with a continuous track to the Pacific, would be limited to 30,000, or even 100,000 passengers. I believe that in five years after a line should be laid down from the mouth of the Kansas to Fort Laramie, the local population on each side, created by the line, would more than pay all its expenses. I believe, also, that the great business of a Pacific railway would be to supply the valley of the Mississippi with silks, spices, coffee, tea, oil, and sugar, and to take back western emigrants, dairy produce, live stock, tobacco, and other western produce.

It is the result of my experience, that it requires an annual expenditure of twenty per cent. in the cost of cars and engines, to cover repairs and deterioration; and companies which wish to keep up their stock make such expenditure. The wear of passenger cars is quite as heavy as the usual wear of freight cars.

The railroads of Massachusetts derive more than half their income from way-business. More than two-thirds the passengers are way-passengers, and as you lengthen the line the proportion of through business diminishes. On the line from Boston to Albany, 75 per cent. of the gross income is derived from way-business.

The Reading railroad, however, in Pennsylvania, which carries freight at six mills per ton a mile, in trains of 423 tons, carries most of its tonnage over seven-eighths of its line, and in one direction returning with empty trains. It pays interest on its debt, and earns 16 per cent. on its stock; and I think more than three-fourths of this is derived from what is substantially through business.

The Boston and Worcester railroad is 44 miles long, from Worcester to Boston. It is fed by three railroads at Worcester, and has consequently more through business than the Western. I have been conversant with its affairs for twenty years, and have lived near it. When first built it cost $1,800,000; had little traffic except through business. The local was not considered of value.

It paid six to seven per cent., and soon built up a large local business, and populous villages now stand in places then desolate. As its business increased it doubled its tracks and stations and equipage, and made branches, and since 1839 has nearly *trebled* its capital, and still pays six to eight per cent.

I do not think, however, its local business alone would have paid it for twenty years above three per cent.

With respect to the cost of transportation on railroads, it depends on four elements: The length of line, fuel, gradients, and amount of business. Where the run is short, say ten miles, the loading and unloading costs three cents per mile, and the engine and cars cannot average with freight trains more than half a day's duty. Transportation in such cases may cost seven cents per mile.

Where the run is 100 miles or more, and the fuel cheap and the business ample and gradient light, a vast business can be done, and passengers and freight be transported at *less than one cent* per passenger and ton per mile.

Cities and towns spring up in twenty years. Worcester and Springfield have in that time increased six fold; and if a new line be now laid through a fertile solitude, I have no doubt it will create a populous country around it.

I am, very respectfully, yours,

E. H. DERBY.

P. S.—I cannot conclude this letter without expressing a few hopes as to the Pacific railway. Should Congress grant charters, let me express the hope, that they will not be intrusted to reckless speculators alone, but that Congress, like Napoleon, will select the most competent men in the country as corporators. Such course will, in my opinion, save one-third the cost of construction. Let me advocate, too, the policy of adopting at once three lines; one from the mouth of the Kansas, by Fort Laramie, to San Francisco; another from the frontier of Texas to the mouth of the Gila; another from Superior to the Straits of St. Juan de Fuca. It seems to me they are all necessary to develop the country and to quiet the different sections of the Union.

Had I the honor to act on the committee, I should advocate three charters for these lines, and for each mile finished I would suggest a grant of $10,000 per mile, for which the company should give its bond, conditioned to transport the mail daily, in each direction, at the rate of 500 miles per day, and to carry free the officers, soldiers, and sailors of the United States, and the munitions of war, at a low fixed price, in preference to all other freight.

For fifty millions the government might thus cheaply secure vast advantages; and rating government stock at 4½ per cent., would secure them at little more than the ordinary cost of mail transportation.

I would then suggest a grant of a width of ten rods for the road of each alternate section for fifteen miles on each side of the road to the company, coupled with the condition that it should be faithfully applied to defray the cost of the road, and reserving to the United States the privilege, at any time, of taking the line at the cost over the mortgage, with interest, at the rate of *eight* per cent., and an advance of *twenty-five* per cent. on such cost and interest after crediting ninety per cent. of the amount that should be realized from the sales of the land granted.

Such plans would enable the government always to exert a salutary control over the rates of transportation, and the grant of land would thus inure to the benefit of the Union.

The State also should have the appointment of some of the directors.

No. 7.

BOSTON AND WORCESTER RAILROAD,
Auditor's Office, Boston, April 26, 1856.

SIR: The president of the Boston and Worcester Railroad, to whom your letter of the 14th instant was addressed, in relation to the number of persons employed, and the amount paid them by the corporation, has been so much occupied that he has not found time to answer your inquiries, and has directed me to attend to that duty, and explain to you the cause of delay.

I find, upon making an analysis of our pay-rolls, the following result, viz:

That there are employed in the several offices at the principal station in Boston ten persons, whose annual average compensation is $1,570 each, varying from that of the clerk or secretary of the corporation, which is $200, to that of the president, which is $4,000 per annum.

There are also eighty-three other persons, who are either agents at the several stations, heads of different departments of labor, conductors or engineers of trains, &c., whose pay averages about $675 each, varying from $200 to $2,000 per annum.

In addition to the foregoing there was, in 1855, an average of 458 persons employed during the whole year, from one dollar to two dollars per day, or at an average of $1 $35\frac{8}{10}$, amounting to $193,755; making in all 551 persons, at a cost of $265,176.

RECAPITULATION.

10 officers and clerks, (president, superintendent, &c.)		$15,700 00
4 superintendents of freight and passengers at the stations in Boston and Worcester	$4,340 00	
14 station agents on main road, from $300 to $500	6,050 00	
11 station agents on branches, from $200 to $500	3,550 00	
		13,920 00

12	conductors, (passenger trains,) from $600 to $800	$8,400 00	
26	engineers, (passenger and freight trains,) at $750	19,500 00	
			$27,900 00
16	road engineers, machinist, carpenter, &c.		13,901 00
93			71,421 00
458	laborers in repair shop, on the road, and at the several stations		193,755 00
551	Total pay for 1855		265,176 00

In addition to the foregoing there was paid for fuel, which is mostly labor	$151.475 00
Iron, and other materials	166,468 00
Loss account, taxes, and insurance	20,438 55
Total cost of running the road	603,542 55

Gross income about $1,830 for each person employed, or $1,008,005.
Length of road and branches, 68 miles.
Number of men employed for each mile, 8.
Number of miles run by all trains, 541.528.
Passengers carried one mile, 25,736,826.
Tons of freight carried one mile, 12,066,959.
On the Boston and Maine road, which, with its branches, is 83 miles long, the number of men employed was 683, or 8 per mile.
The gross income per man was $1,251.
Number of miles run by all trains, 583,016.
On the Western railroad, from Worcester to Albany, 156 miles, the number of men employed was 9 per mile.
On 8,116 miles of English roads it was 12 per mile.
On some of the Massachusetts roads it is but 6½ to the mile.

You will perceive that the number of men required for operating our roads varies very much, and can make your own conclusions as to the number which would be employed on the one you are advocating.

The amount of labor and materials will certainly be large, and, according to our views, be put to a good use.

Your difficulty will be to agree upon the route, as there must be a diversity of opinion, which will be all the more difficult to overcome, because it will result from *interest* rather than *principle*.

We hope you will succeed, and that the road will be built.

Any further information you may wish, which is within our means, will be cheerfully furnished.

Respectfully yours,

DAVID WILDER, JR., *Auditor*.

Hon. Z. KIDWELL, *M. C.*

No. 8.

OFFICE PENNSYLVANIA RAILROAD COMPANY,
Philadelphia, April 11, 1856.

DEAR SIR: Yours of the 7th instant is received. The cost of our best locomotives is ten thousand dollars. These weigh about 60,000 pounds. Locomotives weighing from 40,000 to 45,000 pounds may be obtained for $8,000 to $8,500 each. Smaller sizes are still lower. The price of the machine depends, to a considerable extent, upon its

style of finish; that given above is for a plain engine, such as are now in general use.

Railroad companies anticipate an increase, rather than a decrease in the cost of locomotives. The prices paid in this country are considerably below those charged at the locomotive manufactories of England, and on the continent of Europe—chiefly owing to the greater amount of work put upon them, which the low rate of interest on money there justifies.

If it was not for the continual improvements made in railroad machinery, an expenditure of 15 per cent. off their cost, for repairs and renewals upon locomotives and cars, would maintain them in full efficiency for any number of years. These improvements, however, make it true economy to dispense with old machines, and purchase new ones. This has been the case since the introduction of railroads into this country, and will doubtless continue to be so for many years.

It will afford me pleasure to give you any further information that you may desire upon this subject. I have great faith in the importance and utility of the construction of the Pacific railroad, and believe that it can only be effected in a reasonable time, through the aid of the general government.

Truly, your obedient servant,

J. EDGAR THOMSON, *C. E.*

Hon. Z. KIDWELL, *M. C.*

No. 9.

OFFICE MASTER OF MACHINERY B. & O. R. R. Co.,
Baltimore, April 9, 1856.

DEAR SIR: I herewith send you answers to the interrogatories made by Mr. Kidwell, whose letter I enclose to you.

The average cost of our first-class locomotives is.....	$10,000
Do.....do.....second..... do	8,000
Do.....do.....third.....do.....	4,500

Do not think there will be much, if any, variation in the price of locomotives.

The average cost of our first-class passenger cars is.....	$3,000
Do.....do.....second.....do.....do	2,500
Do.....do.....third.....do.....do	1,800
Do.....do.....baggag cars.....	1,000
Do.....do.....first-class freight cars.....	550
Do.....do.....do.....platform cars.....	400

It costs per year to keep one locomotive in perpetual use, $1,500; a passenger car, $400; and a freight car, $50.

The average life of locomotives is between fifteen and twenty years.

Hoping the above will prove satisfactory, I am, yours, respectfully,

S. J. HAYES,
Master of Machinery.
Per HOBLITZ ELE.

CHAUNCEY BROOKS, *President.*

OFFICE BALTIMORE AND OHIO RAILROAD COMPANY,
April 9, 1856.

DEAR SIR: Herewith I send you the report of our master of machinery on the questions submitted. I likewise send you, by the same mail, one of our annual reports, which may be of service to your committee.

Very respectfully, yours,
C. BROOKS, *President.*

No. 10.

ALTOONA, BLAIR COUNTY, PENNSYLVANIA,
April 29, 1856.

SIR: I acknowledge the receipt of your communication of the 14th instant, containing the following inquiries, viz:

"1st. What number of men, without reference to length of time, have been employed by your company during the last year?"

In reply, I would state that, taking one month as the average for the whole year, we employ 4,140 persons.

"2d. What is the average sum of money paid to such persons, inclusive of all persons, from the president down to the humblest laborer?"

To this I answer, that in one month we pay out as compensation for services rendered the sum of $109,509 44, which yields to each a monthly average of $26 45 $\frac{302}{2070}$, and yearly $317 41 $\frac{807}{1035}$.

Very respectfully, yours, &c.,
J. EDGAR THOMSON,
Per H. J. LANBAUT, *Supt.*

Hon. Z. KIDWELL,
House of Representatives, Washington, D. C.

No. 11.

BOSTON AND WORCESTER RAILROAD OFFICE,
Boston, April 11, 1856.

SIR: In reply to your favor of the 7th instant, I have to say, that a part of the questions which you ask can be replied to in only very general terms, and by estimates applicable to a peculiar state of facts.

The life of an engine or car, as well as the cost of repairs, will be more or less according to the amount of service done by it, the character of its original construction, and the character for evenness, solidity, grades, and curves of the track it is used upon.

An engine will be much affected, also, by the fuel used—coal wearing an engine much faster than wood. More, perhaps, than either of these causes, the rate of speed affects the duration of all rolling stock.

With a view to all these varieties, for which you will have to make due allowances, I will give you my best estimates from my own expe-

rience, premising, however, that I consider ours a first-class New England road in its general features, above alluded to, in all but curves; in that particular it is rather a hard one.

For its characteristics, I would refer you to the legislative returns of Massachusetts roads, which I had the honor to send to you a few weeks since.

Cost of engines, say for the last five years.

First class used by us average $9,000; second class, $7,500; third class, $7,000. Weights varying from eighteen to twenty-six tons, net.

The cost has increased and probably will increase. The reasons—increased rate of cost of skilled labor, depreciation of value of money, and increased finish, with modern improvements.

Life of a good engine twelve years. Annual repairs in full employment, say running one hundred miles per day, at a speed of twenty-five to thirty miles per hour, $1,500.

Cost of cars.

First passenger-cars, sixty seats, $2,000 to $2,500—say $2,250.

I have two cars that cost $3,000 each.

Estimated cost of repairs, $300 per annum; duration, say ten years.

Freight car.

Box, eight wheels, $650; platform, $550. Duration about the same, say ten years; repairs $100 annually.

Baggage cars cost $1,000 to $2,000—say $1,500. Duration about the same as freights; annual repairs, $250.

We use nothing which we call *trucks*, except as parts of the above-named cars.

Yours, very respectfully,

THOS. HOPKINSON, *President, &c.*

Hon. Z. KIDWELL.

No. 12.

OFFICE OF THE N. YORK AND ERIE R. R. Co.,
New York, April 15, 1856.

SIR: The first cost of locomotives of the different classes range from $9,000 to $15,000 each. We cannot expect them to be lower for some time to come; but anything on this subject must be conjectural, as the prices are, of course, affected by the cost of iron and other materials, which are very fluctuating, and also by demand and supply.

Passenger cars cost from $2,000 to $3,000 each; freight (box) cars, from $625 to $675; cattle-cars, from $575 to $650; flat cars, (platform,) from $475 to $525; baggage cars, from $650 to $750.

It is difficult to say what the average *business* life of the above is; in fact, they may be said never to die, except through accident, as their several parts are renewed as fast as they fail, so that, in course of a few years, no part of the original machine remains, and yet that which *purports* to be the same still remains in all its efficiency. "Rolling stock," run say 100 miles per day, 313 days per year, will cost for renewals and repairs sufficient to keep it in permanent efficiency for use, from 15 to 20 per cent. per annum on its original cost.

Respectfully,

H. RUNNDELL, *President.*

Hon. Z. KIDWELL, M. C., *Washington.*

No. 13.

PRESIDENT'S OFFICE, HUDSON RIVER RAILROAD,
68 *Warren street, New York, April* 16, 1856.

DEAR SIR: During the fiscal year ending September 30, 1855, we employed, on an average, 1,238 men, and paid $491,322 36; the road being 144 miles long.

Yours, &c.,

SAM. SLOAN, *President.*

Hon. Z. KIDWELL, *Washington.*

No. 14.

APPLETON'S "MASSACHUSETTS RAILROADS—1842 TO 1855."

A meeting of several persons interested in the stock of various railroad corporations in Massachusetts was recently holden in Boston, for the purpose of considering the causes of the present great depression of value in that species of property—of examining certain statistics which had been collected in regard to the operations of some of the principal railroads in the State—and of consultation upon the most expedient mode of securing to stockholders a fair and just return upon the capital invested in these enterprises.

An introductory statement was made by Mr. William Appleton, who submitted certain tables prepared by Mr. William H. Swift, accompanied by an expression of views and opinions which the meeting regarded as of great interest and importance. It was determined that these statements should be printed and widely distributed.

It is hoped that the facts thus presented will receive the attention which their importance demands. The reasons of the depreciation of property, above alluded to, are obvious, and the remedy is in the hands of its owners.

BOSTON, *February* 4, 1856.

Remarks of Mr. Appleton.

The origin and progress of railroads in this country is so recent that they have grown up during the business life of many of the stockholders, yet something of the history of their commencement may be interesting to a portion of them.

The legislature of Massachusetts, in 1829, appointed a survey to ascertain the practicability and expense of making a railroad from Boston to Lowell, and granted two hundred and fifty dollars for that purpose. They reported that it might be built for something less than four hundred thousand dollars. Those interested in having a road built appointed a committee, who caused a second survey to be made, and the committee reported in 1831. The fact that the stock was not subscribed when the books were opened for that purpose, might have arisen from the want of confidence in the report made to the legislature.

The estimates they presented were made with great care, and they did not hesitate to avow their belief that the cost of the work would not exceed the sum stated, viz: four hundred and sixty-nine thousand two hundred and ninety-six and $\frac{79}{100}$ dollars—the estimate being for the road from Lechmere Point to Lowell. The committee said they were willing to express their belief that six hundred thousand dollars would be sufficient to build the road, and furnish everything necessary to accommodate the amount of travel and transportation calculated in their statements. The committee then go into an estimate of the receipts, and close their report by saying:

"If, then, these estimates are correct, the gross receipts for carriage and tolls on the road will be at least $58,514 per annum. From this must be deducted the annual expense for carriage repairs, &c., which, as exhibited in Statement No. 3, will amount to $22,424, leaving a net income of $36,090, which is six per cent. per annum to the proprietors of the capital employed.

"This may be considered a small rent, not sufficient to induce capitalists to embark in such a project. The committee would agree to this, and would not venture to offer a scheme which promised so little income, were they not confident that they have made their estimate of the cost and annual expenses so high, and of the income so low, as to render it almost certain that the net income will be fully equal to their calculation. And they must venture an opinion, that a property of this kind, not subject to loss by fire, or other like casualties, will be considered good for investment, if an income of five per cent. per annum can be calculated upon with certainty, and the prospect of increase of business on this road is so good as to render it certain, in the opinion of the committee, that the income will fully equal the statement in this report."

Time has shown how incorrect was the estimate of the cost of making, running, and repairing the road, and of the amount of its business.

In 1835 the gross receipts on this road were	$64,654 00
And the expenses of operating the road were.....	19,125 00
Net.....	45,529 00
Cost of construction and equipment.....	1,312,239 00
In 1844, from receipts.....	316,909 00
expenses	139,293 00
Net.....	177,616 00
Cost of construction and equipment.....	1,902,555 00
In 1854, from receipts.....	442,497 00
expenses	364,478 00
Net.....	78,019 00
Cost of construction and equipment.....	2,158,932 00

From 1839 to 1851, inclusive, the corporation paid dividends of eight per cent. per annum upon a capital of from $1,698,496, in 1839, to $1,945,646 in 1851; since that time the property has diminished in value from causes, to a greater or less extent operative upon all roads, which it is one of the objects of this meeting to investigate.

The Boston and Lowell, Boston and Worcester, and Boston and Providence railroads, were in process of making at nearly the same time, and the estimates for expense of building did not materially differ. As the business of the roads increased in ratio with the cost of putting them in operation, no disappointment was shown at the excess of cost; on the contrary, the income was such as to cause large dividends to be made and to reduce the price charged for carrying passengers and freight, and at the same time to increase their means of doing business by laying double tracks, extending depot accommodations, and making branch roads, until, as will be seen, the amount of stock has doubled, and in some cases trebled, the original estimate, and doubled since the road was in successful operation.

But this is not the only difficulty. A very insufficient allowance was made for repairs, particularly of the rails, which it is now admitted required to be relaid in from five to ten years.

For the last ten years, while the dividends to the stockholders have not been large, the increase of expenditure for permanent additions to the road has very materially increased, and has been charged to construction without adequate increase of business.

The question occurs, what course should be pursued by which the capitalist shall receive a fair remuneration for his investment, while the public are accommodated. There appears to be no other than to return so far towards the prices charged on passengers and freight when the roads were opened as will effect the object. The charges made for carrying freight and passengers when the roads were put into

operation would be more than would be necessary. The travelling community will most cheerfully give a fair remuneration to capital so invested, which affords so much saving in time and expense as the railroads do in place of stages, or other modes of conveyance formerly in use.

The legislature guarded the public against extravagant charges by the railroads, by reserving the right to take the property after a limited number of years, by paying the proprietors their capital invested and ten per cent. for the annual use of the same, and by reserving the power to reduce the tolls.

By comparing we find that the proprietors of the more than twenty millions of capital invested in the roads terminating in Boston are to a very considerable extent the same. We find that many of the stockholders have invested in all, or nearly all the roads, which would show that any rivalry between companies was in all cases against the interest of the proprietors.

It may be supposed that the railroad stocks are held by capitalists who would not be materially inconvenienced if the income were reduced or annihilated. This would be a very great error, as the stocks are very much distributed, more so than is generally understood. We cannot state the precise number of stockholders in the seven roads terminating in Boston, but we find more than three thousand are in one company.

Wishing to lay before the stockholders as perfect a view of the state of their property as was possible, Captain Swift, whose acknowledged acquaintance with the subject and high standing, will give full confidence to his report, was applied to, and he has kindly complied with the request, and his reply is now presented to the gentlemen whom we have taken the liberty of asking to meet us at this time.

BOSTON, *January* 22, 1856.

DEAR SIR: At your suggestion I have brought together, in the form of tables, some of the more important statistics of the Massachusetts railroads, more particularly of those leading out of Boston, and for a series of years—say 1842 to 1854 inclusive. The returns for 1855 have not as yet been printed by the legislature, consequently the operations of that year are not included.

The main object to be attained by this exhibition is to show the amount of capital employed in the roads referred to at various periods of time, and at intervals—say of four years, the amount of money which has been received by the several companies for doing the work, and the actual cost incurred by them in performing the same.

The tables have been constructed in all cases from data derived from official sources, either from the condensed and well-prepared statements published annually, in the "Railway Times" of Boston, or taken directly from the legislative reports themselves.

I have added some inferences and opinions suggested by an examination of the facts as exhibited in these tables, and I place the papers at your disposal for such use as you may desire to make of them.

Your obedient servant,

W. H. SWIFT.

Hon. W. APPLETON.

MASSACHUSETTS RAILROADS—1842 TO 1854.

The accompanying tables are compiled and condensed from the official reports of the several railroad corporations to the legislature.

Table 1 exhibits the work and expenses of all the roads which furnished complete returns—say for the ten roads in 1840, the sixteen in 1846, the thirty-two in 1850, and the thirty-seven in 1854.

It was not until the year 1846 that these returns were required to be made in their present detailed form, hence the number of passengers, and the number of tons of freight carried one mile, cannot be stated prior to that year; but from 1846 forward, they can be stated.

It is obvious that no proper comparison can be made of the work of one year with another year, or the work of one road with that of another, without such data, these two items constituting in fact the greater part of all the work done; expresses, mails, &c., forming a very small proportion of the cost of doing the work, although they constitute a considerable item in the yearly receipts.

For the present purpose it will be sufficient to show the general results furnished by the operations of the Massachusetts railroads for the past thirteen years. Referring to table 1, we shall see the net income produced in the four years of 1842, 1846, 1850, and 1854, viz:

	1842.	1846.	1850.	1854.
Capital employed	$19,241,000	$27,034,000	$50,959,000	$59,030,000
Net revenue	1,012,000	1,945,000	3,306,000	3,260,000
Net earnings, per cent.	5.26	7.20	6.49	5.52

The striking result shown in this exhibit, is the fact that $46,000 more was earned in 1850 than in 1854, with $8,000,000 less of capital employed, or, in 1850 we had about $6\frac{1}{2}$ per cent. against $5\frac{1}{2}$ in 1854.

In 1846 was the highest rate of all, $7\frac{1}{5}$ per cent. Now, in 1846, 121,319,000 passengers or tons of freight were carried one mile, and the *mean* rate received was $3\frac{2}{1000}$ cents for each, while the expenses were $1\frac{398}{1000}$ cents for each. In 1850, 219,717,000 passengers or tons were in like manner carried one mile, the rate of each being $2\frac{923}{1000}$, expenses $1\frac{416}{10,000}$. And in 1854, 298,741,000 were carried at $2\frac{911}{1000}$ received, against $1\frac{820}{1000}$ the cost, or the net revenue on each passenger or ton carried one mile in 1846, 1850, and 1854, was respectively $1\frac{604}{1000}$, $1\frac{507}{1000}$, and $1\frac{019}{1000}$. These results refer to the Massachusetts roads generally, or to such as furnished reports *in full* to the legislature.

The same exhibit for seven of the principal roads out of Boston, will show the following results for the years 1850 and 1854.

	1850.	1854.
Capital employed	$24,502,000	$32,938,000
Net revenue	2,396,000	2,199,000
Net earnings per cent	9.78	6.18

Here again the net revenue in 1854, with more capital employed than in 1850, by the sum of $8,436,000, was $197,000 less than it was in the last named year, or the rate of earnings was reduced 38 per cent. in the four years. In 1850 the average receipt for passengers or per ton of freight carried one mile, was 2.82 cents, while the expenses were 1.50 cents each. In 1854 the average receipt was 2.82 cents, same as in 1850, but the expense had increased from 1.50 cents to 1.82 cents, leaving the average net earnings in 1850 1.47 cents against 1.15 in 1854.

The aggregate of passengers and tons carried one mile, was

In 1850.....	165,890,000
In 1854.....	219,799,000

The roads included in the statement, are the Eastern, Boston and Maine, Boston and Lowell, Fitchburg, Boston and Providence, Boston and Worcester, and Western, seven in all. Old Colony is omitted, because consolidated with Fall River between 1850 and 1854.

The average working expenses of the above named roads in 1850, were 48.63 per cent. of the gross receipts; the largest ratio being the Boston and Lowell, 63.44; the least (as reported) was the Eastern, 41.11.

The average for 1854 was 65.63; the largest Fitchburg being 91.95; (Fitchburg consider $216,000 of the expenses to be of that class called construction by other roads;) Lowell, 76.38; and the least, the Eastern again, 52.56.

The results exhibited in the tables furnish the means of making a variety of comparative statements and of corresponding deductions. The general and important inference is a very plain one, viz: that while the gross revenue has largely increased from 1850 to 1854, the earnings or net revenue has very sensibly diminished, if taken in regard to the increased amount of capital employed to do the work.

WHAT ARE THE LEADING CAUSES WHICH HAVE BROUGHT ABOUT THIS DISASTROUS RESULT?

1st. *Competition.* This has been carried on not only by roads running side by side, as between the Boston and Maine and Eastern, the Vermont Central and the Rutland and Burlington, &c., but it has been carried on by the last two named roads with the Western and the New York Central, for the western or lake business, and the same, it may be remarked, has been done by other roads via New York, for the same western business, and all this competition or irregular traffic, it is believed, has been carried on at less price to the forwarder or shipper than the actual cost to the railroad companies.

2d. *An unnecessary number of trains has been run* by these competing roads to secure passenger traffic; in some instances four trains have been run where two would have been ample for all necessary accommodation of travellers, and this, too, for distances of hundreds of miles, day after day, producing a larger expenditure for fuel, repairs of engines and cars, repairs of road, way, &c., than necessary, and causing an increase in cost approaching nearly the ratio of the increased mileage, omitting, also, all consideration of the frequent detention produced on single-track roads to the freight transportation by

these additional or extra passenger trains; the freight having to wait or to be out of their way in all cases.

3d. *Excessive speed given to all trains*, not only express but accommodation and freight trains; also, arising from the necessity, in the last case, of keeping out of the way of passenger trains, and frequently requiring an undue velocity to be maintained by the freights between the stations to effect that object. *Larger and more expensive machines*, required to move the passenger trains *at the increased speed, the destruction* produced by these heavy engines to the iron rails and the bridges, &c.

The injury to both the trains and the track, it is to be remembered, is not in the simple ratio of the velocity, but it is in the duplicate ratio, four times the injury when the speed is doubled, nine times when trebled, &c.

4th. *The very great increase in price of all materials required for use on the road and in the repair shops;* the same of every description of mechanical labor, the very inferior quality of all iron rails which have been manufactured in England for America for these five or six years past, nominally cheaper, indeed, than when we paid £10 *a* £12 per ton, but in reality very much dearer; the bad iron and the heavier engines and trains, with their great momentum, combining to produce the most rapid destruction to the track, and also to the bridges.

5th. The fact that all the older roads in Massachusetts (and many of the newer) having had to increase their lands at stations, provide more buildings, &c., and to renew their entire superstructure, including a large proportion of the motive power and the wooden bridges, and this too when prices of all kinds of materials and labor have been greatly in advance of prices of five or ten years ago.

6th. The preposterous principle laid down by certain men ignorant of the subject, and having a direct interest in reducing prices, that low rates of transportation of both passengers and freight is in the end more productive than higher rates; that more money can be made by carrying a passenger, say between Boston and Albany for 1½ cents per mile or $3, than if the price were 2½ cents or $5; that flour in large quantities, at 25 cents per bbl. or $2 50 per ton, would in time bring more money into the treasury than at 50 cents, or $5 per ton, &c.

This very acceptable doctrine to forwarders met abundant support on the part of persons interested in a particular kind of business, of course, and so of passengers, if, happily for themselves, they were not owners of the non-paying railroad.

In the early management of railroads, prices were fixed rather arbitrarily, as there was no experience to guide in establishing the proper rates, but we all know that these rates were very much higher than those of the present day.

At this time we do know what it costs to do the aggregate work of a railroad, but in consequence of the manner in which the greater number of the companies keep their account of expenses, the exact cost of transporting one passenger one mile, or one ton of freight one mile, cannot be stated separately; to do this rigidly, would require an account to be kept with each engine upon the road, her

consumption of fuel, expense of repairs, &c. Hence the apportionment of the cost of these repairs and those of the roadway to any one department cannot be correctly made, and the same is to be said of the miscellaneous or general expenses. A train for two hundred passengers will require, say one engine and tender, five cars (all kinds) and six men. A freight train for two hundred tons will require say one engine and tender, twenty-five cars and six men; in the passenger train there would be, say, about one hundred and twenty-five tons in all, and in the freight there would be two hundred and fifty tons of cars and two hundred tons of load, together say five hundred tons, or the momentum of the passenger train at thirty miles an hour would be equal to three thousand seven hundred and fifty tons, and the freight train at twenty miles an hour would be ten thousand tons. Who would not say that both must be very destructive to the track, and who would not admit, also, that the "hammering" so produced must be in proportion to the momentum?

Again, the cost of loading and unloading a ton of freight (if in large quantities) we shall find to be about 15 cents for each operation; smaller quantities at way stations, say 20 cents.

The Taunton Branch railroad pay the Boston and Providence railroad 15 cents for loading and the same for unloading per ton, and this after much experience by the Taunton Branch in that onerous part of railroad work.

These remarks are designed to show that it costs much more to transport one ton one mile, than to transport one passenger one mile. As I desire to say something on this point by and by, I refer to the matter here.

The above constitute some of the causes which have combined to enhance the cost of working railroads within the last five years.

Having, as I say, the knowledge of the aggregate cost of this work, and of the capital required to conduct it, it would seem to be an easy problem to determine what the owners of the property ought to receive as a return upon their investment.

Referring to table 1, we shall see that in 1846 we received 3 cents per passenger, or per ton one mile, that it cost 1.4 cents to do the work, and that the net result was 1.6 cents. In 1850 we received 2.92 cents, we paid 1 42 cents, and we had 1.50 cents left. In 1854 we received 2.91 cents, we paid 1.82 cents, and we had only 1.09 cents left, or we regularly declined in each four years from 1.6 to 1.5, and finally to 1.1. These are very large *descents* certainly. Now let us, with the help of a little assumption, determine the probable cost of transporting a passenger one mile, and of a ton one mile, separately, and this not for the best roads we have in point of grades, but take all together, the good and the bad, as they stand in the table.

In 1854, by table 1, we see that 194,158,000 passengers and 104,583,000 tons of freight were carried each one mile; aggregate, say 289,741,000 one mile.

The average cost of moving one or the other of these one mile, was $1\frac{820}{1000}$ cents.

I suppose all will concede that it does cost more *here* to move a ton of freight one mile, including the loading and the unloading, than it costs to move a passenger the same distance. The exact proportion

is not known, nor can it be determined by the reports, for the reasons before given; whether it costs double to move one ton that it costs to move one passenger, or whether more or less, we do not positively know. My own experience, and certain information of a tolerably exact nature, which exists upon this subject, has led me to the conclusion that in general with us, it does cost just about twice as much to move a ton one mile as it does to move a passenger the same distance. I shall so assume it here.

Mean or average cost of one in 1854, ...	1.82 cts.
Do do do two do	3.64 cts.
Calling the proportion as 1 to 2, it will be found that one passenger costs	1.213 cts.
One ton costs	2.426 cts.

in other words, it may be said under this assumption in the relative cost of passengers and tons, that for the year 1854 it cost, in round numbers, about $1\frac{1}{4}$ cents per passenger per mile, and $2\frac{1}{2}$ cents per ton per mile.

7th. This brings me to mention the *commutation or season passengers*, so called, on the roads leading out of Boston, and used by these passengers, say from three to fifteen miles. It has been conceded by nearly all the roads, and for years past, that this class of business is, for its extent, the very worst of all. I think this remark will apply to all the roads where the commutation principle prevails, and nearly in the same degree. Perhaps the Boston and Maine will furnish the most striking illustration, and as it has been stated that it was the only company which refused at a convention of all the Boston roads, held early in 1855, to increase its rates for commutation passengers, it may be instructive to see what the company received for this service.

By the report of an investigating committee of the Boston and Maine railroad, made in September, 1855, there is a return of the commutation or season passengers for the years 1852, 1853, and 1854. The number of these passengers carried one mile during these years was 1,672,705, or about 560,000 per year. These people were carried an average distance of 8.72 miles, and at an average cost of very little more than $\frac{3}{4}$ of one cent per mile, (0.78,) so that in addition to the evil of not receiving a remuneration for the work performed by the company, there was the risk of injuring some of the numerous patrons of the road in this branch of their business. It is at least plain that there could have been no profit in it. Other roads leading out of Boston are doing the same thing; but I hope there is no case quite so bad as this, for the directors of the roads, generally, as I understand, are striving to increase the rates for this hitherto unprofitable kind of work.

What are the consequences of this unwise practice of doing work at less than remunerating prices? One of them is palpably shown in a small table herewith, (No. 3), the date for which will be found in Mr. Martin's book on the Stock Market, showing by figures to be found therein the great depreciation in the market value of seven of the leading railroads out of Boston, from 1845 to 1856, the roads being

the same which are named in our table No. 2. The value of these roads in 1845, then represented by 164,000 shares of stock, was $18,539,000. On the first of January, 1856, the market value of the same number of shares as shown in the stock lists, was $12,279,000 only.

But it is to be borne in mind, that within the period referred to, 11 years, the number of shares in the seven roads named had been increased from 164,000 to 278,000, or that there had been a total depreciation in the market value of the securities named of upwards of $10,000,000, and this within a period of 11 years! It is to be remembered, also, that this loss has not fallen upon the larger capitalists as a general thing, they having in a majority of cases withdrawn their large investments in railroad securities to a great extent. The losses have been sustained by holders possessing more moderate means. The class of owners of from five to twenty shares have been the greatest sufferers: widows, orphans, minors, charitable institutions, &c., persons not in a condition to watch this description of property quite so sharply as those of the class first referred to.

The remedy for the evil attendant upon the present system of working the railroads of Massachusetts is certainly within the reach of the owners of the property. Doubtless there are various opinions as to the expedient mode of applying it.

To recapitulate some of the more prominent of the causes which have produced the present condition of railroad property in Massachusetts.

1. Doing the work at less than remunerating prices; more particularly in the freight department, and in the commutation system for passengers.

2. More mileage of trains than the business in the passenger department will justify. If the same principle could be applied to passengers which is applied to freight, sending off no more cars or trains than are needed day by day for the business offered, this evil would remedy itself; but as this, from the nature of the case, cannot be done, let the daily number of trains be diminished, by putting the whole number to be transported daily, say in two trains rather than four trains! This principle applied to the commutation passengers, would undoubtedly produce a great saving in the cost of transportation in that particular department of the work. For example, there are eight trains each way between Boston and Dedham; that is 160 miles daily. This large number of trains, it is to be supposed, the convenience of the public demands; let us see the probable cost to the company of doing this particular work.

The cost of each mile run by trains in 1854 on the Boston and Providence road was just 1.00, as shown in table 2; it may be inferred therefore, that if four trains were run daily, instead of eight, $80 per diem might be saved in the cost of the Dedham business. This is not an unreasonable deduction, for the 1.00 applies to all freight trains as well as to passengers, and these remarks in the Dedham case being applied to passengers alone, would seem to show that 1 00 per mile run is not too much to place to cost of that particular work.

But I use these figures merely for illustration; there are plenty like them elsewhere.

3. *Excessive speed.* Heavy engines necessary to maintain this high velocity, and consequent destruction to motive power, iron rails, and wooden bridges.

4. Cost of renewing worn-out rails, wooden bridges, &c., and all these at higher prices for every item except the iron rails, as compared with those of a period five years back. The rails, however, purchased at half or two-thirds of the former prices, (10 and 15 years since), being so notoriously inferior in quality that they do not last, under the heavy engines and higher speed, one half the time that the older rails lasted.

5. The fallacy propagated by a certain school, that an excessive amount of work, at an infinitely small price, will produce more money than less work at higher rates. Regarding the maxim to be true, that "time is money," it is to be inferred that few people ride on railroads because it is a cheap amusement; they ride because of other motives, business, &c., and they are willing to pay a fair price for the privilege, as we know.

Suppose, for example, that the Western Railroad should advertise to the world, that during the year 1856, passengers might pass between Albany and Boston *free;* after a month of novelty, how many would be found throwing away their time in this unprofitable employment? It is not likely, either, that the number of passengers would be increased by demanding one or two dollars for the ride; nor would the same sum, more or less, deter any from the journey, if business or pleasure should be the motive for undertaking it; in short, none would go who had not some other object in view than a cheap ride; for loss of time, if no other consideration, would prevent.

These are some of the causes which, in my opinion, have brought about the great depreciation in the value of railroad securities. The remedy is certainly within the control of the proprietors of the roads, and there is no doubt that directors will cheerfully obey any proper instructions tending to improve the condition of their property which the stockholders may deem it expedient to give them.

Having expressed an opinion upon the causes which have led to the present depressed condition of railroad property, I will venture the further expression of an opinion as to the proper remedy to be applied to counteract the evil.

1st. To increase, *generally*, the rates for all kinds of transportation on the Massachusetts railroads, but more particularly in freight, and in that part of it which is usually denominated the second and third classes in the tariff.

2d. That no competition be entered into between any two roads for a business which does not in itself afford a reasonable profit; competition need not imply positive loss, but we may be assured that it has produced that result in many cases within the last five years in railroad transportation.

3d. That the mileage or the daily number of trains for passenger traffic be reduced in all cases where it can be done without manifest injury to the reasonable accommodation of the travelling community.

4th. That the speed of all trains be reduced, more particularly in the season of cold weather, when the risk of injury to life and limb is very greatly increased, and when the destruction of motive power and track is so much greater than it is at other seasons.

5th. That an immediate increase be made in the rates for commutation or season-ticket subscribers upon the roads generally leading out of Boston.

While the cost of all kinds of mechanical labor, and of materials of every description used in the construction and repair of railroads, has advanced within the last three years, there seems to be no reason why railroad owners alone should be expected to do their work at less than remunerating prices. It is very certain that they need not, if the parties interested in that kind of property will act in concert with each other, and agree upon some proper and uniform action, the object of which shall simply be to secure fair returns on the capital invested in these, to the community at large, indispensable avenues of intercommunication.

Tables 1, 2, and 3, have been referred to. Nos. 4, 5, 6, and 7, are also made up from the official returns from 1846 to 1850, inclusive. They were prepared with care for the Western railroad investigating committee in 1852, but the results are quite as instructive at this time as they were when the tables were made. They explain themselves sufficiently without the necessity for illustration.

Table No. 8, Boston and Providence railroad, (1842 to 1849, inclusive,) is extracted from the tables in "Railway Times" of June 6, 1850. The same remark applies to several of the items in table 1, but all are derived from the same official source, viz: the legislative returns.

Boston, *January* 22, 1856.

No. 1.

Operations of Massachusetts railroads—thirteen years.

	1842.	1846.	1850.	1854.
Number of railroads in operation	10	16	32	37
Number of miles in operation	431	622	1,092	1,194
Cost ---dollars	19,241,800	27,034,900	50,959,400	59,030,400
Receipts from passengers---do	1,217,800	2,018,100	3.404,900	4,495,800
Receipts from freight---do	669,600	1,467,900	2,608,700	3,725,100
Receipts from other sources ---do	84,200	119,200	296,500	346,400
Total receipts---do	1,971,700	3,642,100	6,419,500	8,696,200
Expenses of maintenance of way do	190,800	313,700	578,600	1,233,076
Expenses of motive power---do	163,300	331,500	485,700	1,008,000
Expenses of miscellaneous ---do	605,200	1,050,600	1,995,600	3,135,800
Total expenses ---do	959,400	1,696,500	3,112,700	5,435,700
Net income ---do	1,012,300	1,945,500	3,306,700	3,260,400
Expenses, per cent.	48.7	46.6	48.5	62.5
Receipts, per mile run---dollars	1.48	1.56	1.52	1.57
Expenses, per mile run---do	0.72	0.73	0.74	0.98
Net income, per mile run---do	0.76	0.83	0.78	0.59
Miles run by passenger trains	824,000	1,435,700	2,607,600	3,314,400
Miles run by freight trains	420,500	746,500	1,327,000	1,962,100
Total miles run, (including gravel)	1,334,700	2,339,400	4,215,800	5,531,064
Number of passengers carried 1 mile		82,024,200	147,605,600	194,158,800
Number of tons carried 1 mile		39,295,000	72,111,900	104,583,000
Aggregate of passengers and tons carried 1 mile		121,319,200	219,717,500	298,741,800
Receipts per passenger or per ton---do		3.002	2.923	2.911
Expenses per passenger or per ton ---do		1.398	1.416	1.820
Net receipts per passenger or per ton---do		1.604	1.507	1.091

Year 1850.	Eastern.	Boston and Maine.	Boston and Lowell.	Fitchburg.	Boston and Providence.	Boston and Worcester.	Old Colony.	Western.
1. Cost of road and equipment, dolls.	3,120,391	4,021,606	1,945,646	3,552,282	3,416,232	4,882,648	2,293,534	9,963,708
2. Gross receipts.....do..	539,076	594,963	406,421	551,607	370,727	757,946	296,170	1,369,513
3. Expenses .....do..	221,660	289,478	257,884	257,083	161,930	398,338	215,702	607,549
4. Net revenue.....do..	317,415	305,485	148,537	294,524	208,797	359,608	80,468	761,964
5. Miles run by trains.....	311,004	468,590	235,995	375,424	251,950	436,199	216,879	768,764
6. Passengers carried one mile.....	14,656,349	19,788,934	9,706,190	14,299,205	8,412,205	19,551,021	8,103,246	21,941,398
7. Tons freight carried one mile	1,829,530	4,465,801	5,863,416	8,284,617	2,222,150	9,663,386	1,268,089	25,206,308
8. Passengers & tons carried 1 mile..	16,485,879	24,254,735	15,569,606	22,583,822	10,634,355	29,214,407	9,371,335	47,147,706
9. Receipts passenger or ton, 1 mile..	3.27	2.45	2.61	2.44	3.48	2.59	3.16	2.90
10. Expenses.....do.....do.....	1.34	1.18	1.65	1.14	1.52	1.36	2.30	1.29
11. Net revenue...do.....do.....	1.93	1.27	0.96	1.30	1.96	1.23	0.86	1.61
12. Receipts per mile run, (trains)....	173.0	127.0	172.0	147.0	147.0	173.0	137.0	178.0
13. Expenses.....do.....do.....	71.0	62.0	109.0	67.0	64.0	91.0	99.0	79.0
14. Net revenue...do.....do.....	102.0	65.0	63.0	80.0	83.0	82.0	38.0	99.0
15. Expenses, per cent.....	41.11	48.65	63.44	46.60	43.68	52.56	72.85	44.38

No. 2—Continued.

Year 1854.	Eastern.	Boston and Maine.	Boston and Lowell.	Fitchburg.	Boston and Providence.	Boston and Worcester.	Old Colony.	Western.
1. Cost, road and equipment, dolls.	4,447,459	4,179,535	2,158,932	3,730,965	3,611,821	4,856,370	----------	9,953,258
2. Gross receipts----------do--	730,269	906,790	442,991	704,638	544,829	952,894	----------	1,763,944
3. Expenses----------do--	383,844	485,228	338,316	647,919*	335,703	610,755	----------	1,045,241
4. Net revenue----------do--	346,425	421,561	104,175	56,719	209,126	342,139	----------	718,703
5. Miles run by trains ----------	390,560	569,189	286,458	505,034	330,590	551,847	----------	989,432
6. Passengers carried 1 mile--------	16,029,380	28,473,879	9,221,761	17,312,208	11,995,218	26,408,157	----------	28,684,552
7. Tons freight--do----do----------	2,896,771	9,165,196	8,223,586	11,869,692	5,176,144	12,057,532	----------	32,284,823
8. Passengers & tons ---do----------	18,926,151	37,639,075	17,445,347	29,181,900	17,171,362	38,465,689	----------	60,969,375
9. Receipts 1 pass. or 1 ton 1 mile--	3.86	2.41	2.54	2.42	3.17	2.48	----------	2.89
10. Expenses--do----do------do----	2.03	1.29	1.94	2.20	1.96	1.59	----------	1.71
11. Net revenue-----do------do----	1.83	1.12	1.60	0.20	1.21	0.89	----------	1.18
12. Receipts per mile run, (trains)----	148.0	151.0	154.0	140.0	163.0	173.0	----------	178.0
13. Expenses, do----do------do----	76	85.0	112.0	127.0	100.0	108.0	----------	106.0
14. Net revenue-----do------do----	72	66.0	42.0	13.0	63.0	65.0	----------	72.0
15. Expenses, per cent----------	52.56	53.51	76.38	91.95	61.62	64.10	----------	59.28

* Fitchburg report that working expenses are $431,922 in 1854, balance expended on new buildings, new cars, &c.

No. 3.

Average market value of railroad shares during the year 1845, *and the market value in January,* 1856.

Corporations.	No. of shares.	Price, 1845.	Amount.	No. of shares.	Prices, Jan., 1856.	Amount.
Eastern	18,000	109	$1,962,000	18,000	46	$828,000
Maine	23,000	112	2,576,000	23,000	84	1,932,000
Fitchburg	18,500	120	2,220,000	18,500	74½	1,378,250
Lowell	18,000	120	2,160,000	18,000	63	1,113,400
Worcester	35,000	119	4,165,000	35,000	85	2,975,000
Western	30,000	102	3,060,000	30,000	89	2,670,000
Providence	21,600	111	2,396,600	21,600	64	1,382,400
	164,000	------	18,539,600	164,100	----------	12,279,000
					Difference -----	6,260,600
						18,539,600

The above difference of $6,260,000 is obtained by taking for 1856 the same number of shares as in 1846. But these railroads have increased their capital since 1846 $11,450,000, or 114,500 shares; and the average market value of the above shares in January was, say $75, (74 8;) now the average value in 1846 as above was, say $113, (112.9 ;) the difference, say $38 per share on the increased number of shares, should be added to the loss of $6,260,000.

By the tables it appears that in addition to the loss in the market value of the stock, with a capital of 27 millions in 1846, the net receipts were 1.60
With a capital of 51 millions in 1850, the net receipts were..... 1.50
With a capital of 59 millions in 1854, the net receipts were..... 1.09

So that, with double the capital, and with increased gross receipts, the stockholders of 1856 received 38 per cent. less income than in 1846, and at the same time their stock is $38 per share of less value in the market.

No. 4.

Cost of maintenance of way, and of repairs of engines and cars, on each of the following roads, per mile run by trains, from 1846 *to* 1850, *inclusive, five years.*

Road.	Miles run by trains.	Maintenance of way.	Do. per mile.	Repairs of engines and cars.	Do. per mile.	Total per mile.
	Miles.	*Dollars.*	*Cents.*	*Dollars.*	*Cents.*	*Cents.*
Western	3,696,713	690,049	18.66	547,651	14.56	33.22
Boston and Worcester	2,063,632	321,521	15.72	355,621	17.23	32.95
Boston and Maine	1,812,422	206,136	11.37	191,209	10.55	21.92
Fitchburg	1,557,937	127,307	8.17	148,356	9.39	17.56
Boston and Lowell	1,202,088	269,440	22.41	296,380	24.65	47.06
Eastern	1,356,136	142,048	10.45	97,659	7.20	17.65
Boston and Providence	1,165,079	152,328	13.07	133,136	11.42	24.49
Old Colony	901,543	95,734	10.57	109,318	12.12	22.69
	13,755,550	2,004,563	14.57	1,879,330	13.66	28.23

No. 5.

Table exhibiting the quantity of work done in five years, (1846 *to* 1850, *inclusive,*) *on each of the following roads, expressed in passengers carried one mile and in tons of freight carried one mile; also, the gross expenses of each road for the same period. For the purposes of this comparison, the cost of transporting a passenger one mile, and a ton of freight one mile, is assumed to be the same.*

Roads.	Number of passengers and number of tons carried one mile, aggregate.	Gross expenses.	Cost per passenger or per ton, per mile carried.
		Dollars.	*Cents.*
Western	213,925,952	2,937,593	1.373
Boston and Worcester	126,499,456	1,899,845	1.502
Boston and Maine	92,997,700	1,237,515	1.330
Fitchburg	82,702,400	1,077,169	1.302
Boston and Lowell	82,227,452	1,258,519	1.535
Eastern	74 720,643	985,066	1.318
Boston and Providence	50,118,288	860,220	1.716
Old Colony	36,198,135	721,912	1.994
	759,390,026	10,977,839	1.445

No. 6.

Table exhibiting the useful effect, or work done for each mile run by trains, on the following roads from 1846 *to* 1850, *inclusive, expressed in passengers and tons of freight carried one mile.*

Roads.	Aggregate of miles run by the trains.	Aggregate passengers and tons, freight.	Average number carried for each mile.
Western	3,696,713	213,925,952	57.9
Boston and Worcester	2,063,632	126,499,456	61.3
Boston and Maine	1,812,422	92,997,700	51.3
Fitchburg	1,557,937	82,702,400	53.8
Boston and Lowell	1,202,088	82,227,452	68.4
Eastern	1,356,136	74,720,643	55.1
Boston and Providence	1,165,079	50,118,288	43.0
Old Colony	901,543	36,198,135	40.0
	13,755,550	759,390,026	54.12

No. 7.

Table exhibiting the number of passengers carried one mile, and the number of tons of freight carried one mile; also the amount received for transportation of passengers, and amount received for freight, &c., on each of the following roads, during the years 1846 *to* 1850, *inclusive.*

Road.	Trains, miles run.	Number carried one mile.			Gross receipts.			Gross expenses.	Expenses per cent.
		Passengers.	Tons freight.	Total 1 mile.	Passengers.	Freight, &c.	Tot'l receipts.		
Western	3,696,713	94,960,518	118,965,434	213,925,952	$2,595,538	$3,653,601	$6,249,139	$2,937,593	47.0
Boston and Worcester	2,063,632	79,482,610	47,016,846	126,499,456	1,645,111	1,809,356	3,454,467	1,899,845	54.9
Boston and Maine	1,812,422	75,812,377	17,185,323	92,997,700	1,596,428	893,130	2,489,558	1,237,515	49.7
Fitchburg	1,557,937	52,739,430	29,962,970	82,702,400	980,951	1,227,362	2,208,313	1,077,169	48.7
Boston and Lowell	1,202,088	48,641,939	33,585,513	82,227,452	953,224	1,163,675	2,116,899	1,258,519	59.4
Eastern	1,356,136	67,690,908	7,029,735	74,720,643	1,339,556	987,553	2,327,109	985,066	42.3
Boston and Providence	1,165,079	40,197,354	9,920,934	50,118,288	1,145,810	657,820	1,803,630	860,220	47.7
Old Colony	901,543	31,313,550	4,884,585	36,198,135	758,434	336,969	1,095,403	721,912	65.9
Totals	13,755,550	490,838,686	268,551,340	759,390,026	11,015,052	10,729,466	21,744,518	10,977,839	50.4

No. 8.

Boston and Providence Railroad—1842 *to* 1849, *inclusive.*

	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
Coast of road and equipment	$1,892,800 00	$1,914,400 00	$1,886,100 00	$1,964,600 00	$2,109,400 00	$2,544,700 00	$3,031,100 00	$3,370,200 00
Gross receipts	236,400 00	233,300 00	283,700 00	350,600 00	360,800 00	363,300 00	354,300 00	354,300 00
Gross expenses	112,800 00	125,300 00	113,800 00	152,800 00	169,600 00	167,900 00	182,200 00	163,600 00
Net revenue	123,600 00	108,000 00	169,800 00	197,800 00	191,100 00	195,400 00	172,000 00	190,600 00
Receipts per mile run	179 00	178 00	206 00	200 00	181 00	161 00	146 00	145 00
Expenses per mile run	85 00	95 00	83 00	87 00	85 00	74 00	75 00	67 00
Net revenue per mile run	94 00	83 00	123 00	113 00	96 00	87 00	71 00	78 00
Miles run by trains	132,200	131,400	137,100	175,200	198,900	226,200	243,000	244,800
Expenses, per cent.	47.88	53.52	40.14	43.59	47.09	46.28	51.41	46.33
Net income, per cent. on cost	6.59	5.64	9.06	10.07	8.85	7.68	5.07	5.66

No. 15.

TREASURY DEPARTMENT,
Register's Office, June 28, 1856.

SIR: I have the honor to enclose a statement exhibting the imports to and exports from California, for five years preceding the close of the past fiscal year, and regret that the information is not more complete.

The inter-commercial State trade requested cannot be furnished, as no account of the same has heretofore been required of the collectors of customs; but it is hoped that Congress will, by carrying out the joint resolution on this subject passed at the present session, enable the department to lay it before them.

Very respectfully, your obedient servant,

F. BIGGER, *Register.*

Hon. Z. KIDWELL,
House of Representatives.

Statement exhibiting the value of imports to and exports from California, from June 30, 1850, *to June* 30, 1855.

Years ending—	Imports.	Exports.		
		Foreign.	Domestic.	Total.
June 30, 1851	*a*$13,531	No returns ---	No returns ---	No returns.
30, 1852	*b*4,648,587	No returns ---	No returns ---	No returns.
30, 1853	*a*101,312	No returns ---	No returns ---	No returns.
30, 1854	8,407,701	$1,239,419	*c*$2,183,976	$3,423,395
30, 1855	5,951,379	1,034,651	7,189,415	8,224,066
Total	19,122,510	2,274,070	9,373,391	11,647,461

a Informal.
b No details.
c In part only.

F. BIGGER, *Register.*

TREASURY DEPARTMENT, *Register's Office, June* 28, 1856.